

LATINO SUCCESS STORIES IN HIGHER EDUCATION: A QUALITATIVE STUDY OF
RECENT GRADUATES FROM A HEALTH SCIENCE CENTER

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This study used qualitative research, particularly life history analysis, to determine the personal pathways of success for Latino students who chose to enter a health science center for graduate study and who graduated. By giving voice to individual success stories of Latino students, some of the influences on the life pathways of these graduates were determined. For the purposes of this study, success was defined as graduation from a health science center with either a doctor of philosophy, doctor of public health or doctor of osteopathic medicine degree.

Four research subjects agreed to participate in this study from a possible 11 students from the graduating class of 2004-2005 at this health science center. Data were gathered through multiple in-depth interviews of the students themselves over a period of no more than one month for each participant. Data were analyzed using the mind mapping technique and Padilla's unfolding matrix.

Findings indicate that each participant traveled a different pathway to achieve educational success although similarities did exist across participants. The influences of family background, cultural background, educational background and personal perceptions and goals did affect the pathways of these four Latino graduates. While three of four participants indicated that family was the most important influence on their academic success, all participants related the importance of family to their success, although their definitions of family seemed to vary and included the concepts of education, culture, and personal perceptions and goals. The concepts of family support of education and a culture of education within the family unit emerged as similar themes among study participants. Other similarities among participants were a high academic

self-concept, a strong internal locus of control, the ability to create academic community, and a positive view of potentially negative situations. Individual themes emerged from the narratives within each category for each participant.

The impact of previous studies on student success, using undergraduate models, was reviewed, and one influence was found among the study participants that had not been used in previous models – health. Implications of findings from this study for educational policy, programs, and practice are discussed.

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Such a study as this would not be possible without the four participants who allowed me to tell their stories. Their willingness to participate in the microscopic scrutiny that life history analysis entails was necessary to complete this study. They are truly successful in the grandest sense of the word. I look forward to seeing what the future holds for them as they make even greater strides in science and medicine.

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CHAPTER 1

INTRODUCTION

Along every pathway, a little rain must fall. When translated into the world of higher education, along every pathway to graduation, barriers arise. That is the story for all students, but for some students, what is a small barrier becomes an insurmountable obstacle, forcing a quick exit from the world of higher education. Unfortunately, these barriers have been highest for the groups who have traditionally had the hardest time traversing them—women and minorities. Years of affirmative action have helped make the barriers a little less daunting. Today in the US, minority attendance at four-year institutions is approximately 30% (Iowa State, 2004). However, the introduction of minorities into US higher education has been a slow process. While the increase in minority representation at four-year institutions after three decades of affirmative action has improved, there are still areas where minority attendance has yet to reach comparable levels. The graduate and professional school levels of higher education are two of those levels and continue to show slow progress in terms of minority participation. In 2001, minority students accounted for 18.5% of the total graduate student population earning a master's degree, 14.5% of the total student population earning a doctoral degree, and 23.9% of the total student population earning a first professional degree (US Bureau of the Census, 2003). This study focuses on these two levels of higher education, doctoral and first professional degree completion, where the most inequities still exist.

Minority Attendance at the Academy

The history of minority attendance at colleges is a long and arduous one with some history being made even today. A push for college opportunities for women and African

Americans during the antebellum period of higher education in the US started the movement for minority access, with both groups agitating for access at about the same time (Lucas, 1994).

Greater minority access to higher education came when millions of soldiers returned from World War II, and the federal government enacted the GI Bill, which encouraged many soldiers to enroll in college. Passage of the Higher Education Act of 1965 also made funding more available and college more accessible to a large group of people, including more minority students in higher education; however, specific programs for minority students, other than African Americans, still did not exist (Prucha, 1973).

Following the movement that resulted in more African American students in higher education, Native American students began to agitate for access to higher education with the Tribal College movement, which started more than 30 years ago (O'Brien & Zudak, 1998). Opportunities did exist for Native Americans to attend college prior to the Tribal College movement (O'Brien & Zudak, 1998), but the barriers to Native American education that exist today existed prior to World War II as well (Fletcher, 1888). Education was available by church groups or the federal government in predominantly white institutions, but few Native Americans had advanced to the highest educational levels (Boyer, 1997).

For Latino students, access to higher education has been a slower path. Enactment of the Hispanic Serving Institution (HSI) Act came in 1993 with reauthorization of the Higher Education Act (HACU "The Increasing Presence," 2000). Until then, Latino students had limited access to higher education, especially in the early days of higher education when access was impeded by legal mandates (Southern Education Foundation, 1995). Today, some of the same barriers to higher education for Latino students that have existed since the beginning still exist: recent immigration to the US, limited English language proficiency, cultural issues, limited

financial aid, skewed assessment tests as part of entrance requirements, lack of knowledge about college among parents and students, and an inhospitable campus climate (Carnevale & Rose, 2003; Justiz, 1995; O'Brien & Zudak, 1998). These barriers may lead to increased attrition for Latinos, meaning that fewer students of Latino descent graduate from college and even fewer attend and graduate from doctoral programs and professional schools.

Asian American students may soon be able to attend Asian American Serving Institutions as the Asian American community agitates for a federal policy to implement a new minority-serving institution similar in scope to HSIs. However, HSIs lack the federal funding provided to Historically Black Colleges and Universities and Tribal Colleges, which were created as new, separate institutions to address the special needs of African American and Native American students. HSIs are designated from the existing pool of higher education institutions with about six being created each year (Laden, 2001; Schmidt, 2003). In the past decade, more than 240 colleges have been designated Hispanic Serving Institutions after 25% of their enrollment was of Hispanic descent with more than 50% of those students coming from low-income families (Benitez, 1998; Schmidt, 2003).

Population Trends and Higher Education

No matter what the history of minority access to higher education, the reality of today is that increasing the number of minority students graduating from college is an important policy goal for the continued success of the US economy. Minorities will become the majority of US residents during the 21st century. When looking at population projections, of all minority groups, the greatest effect for higher education can be achieved by increasing college graduation rates among Latino students. Latinos became the largest minority group in 2005, representing 13% of

the population, and by the middle of the 21st century, Latinos will make up 25% of the US population (Llagas & Snyder, 2003). Between 1990 and 2000, there was a 44% increase in the Latino population (HACU “Analysis of Projections,” 2000). Along with that growth came a rapid increase in the number of Latino students enrolling in college within the continental US between 1990 and 1997 (Snyder, 1999). The increase among Latinos was larger than any other minority group during that time period; however, the percentage of Latino students who attended college increased slightly when compared with other groups (Carnevale & Rose, 2003; US Bureau of the Census, 1999). Margarita Benitez (1998) asserts that Latinos are the fastest-growing minority in the US; however, the number of Latinos at all levels of education has not kept pace with population growth. US Census Bureau (1999) projections on the increase of Latinos within the US population echo that assessment. In 2002, Latinos earned just 9.9% of associate degrees, 6.2% of bachelor’s degrees, 4.6% of master’s degrees, 4.8% of first professional degrees, and 3.4% of all doctoral degrees awarded (US Bureau of the Census, 2003). If the percentage of Latinos attending and completing postsecondary education does not increase with the increasing population proportion of Latinos in the US, a serious gap in educational attainment in the US population will also be in the future (Laden, 2001; O’Brien & Zudak, 1998).

Barriers to Higher Education for Latino Students

Currently, Latinos are the least-educated racial group, (Schmidt, 2003) with just over 11% of Latinos age 25 and older holding a bachelor’s degree. In the same age bracket, 17% of African Americans, 27% of whites, and 47% of Asian Americans hold a bachelor’s degree (Schmidt, 2003). According to the Hispanic Association of Colleges and Universities (HACU

“The Increasing Presence, 2000), this presents a nationwide problem since projections for growth in the Latino population will result in an undereducated, rapidly growing population. The HACU leadership believes that “the future of our nation will depend heavily on assuring that Hispanics have improved access to high quality postsecondary education” (HACU “The Increasing Presence,” 2000). When looking at higher education trends at the highest levels of education, just 3.4% of doctoral degrees were conferred on Latino students in 2002. In the same year, 4.8% of first professional degrees conferred were received by Latino students (US Bureau of the Census, 2003). This lack of Latinos at the highest levels of educational attainment has resulted in fewer scientists and doctors of Latino descent, which has resulted in what the Sullivan Commission (2004) calls “profound” implications for the healthcare system in the US. These inequities in the number of Latinos earning the highest degrees in science and medicine as compared to the overall student population is linked to disparities in the healthcare system for Latinos. These disparities result in higher levels of sickness, disability, and death among Latinos (IOM, 2003; AAMC, 2005).

To improve the participation of Latinos in higher education, the barriers that have traditionally existed for Latino students must be addressed. A report commissioned by the Board of Regents for the University of California (Hayward, Brandes, Kirst, & Mazzeo, 1997), identified some of the barriers to higher education for historically underrepresented groups. The barriers include less access to information, lack of counseling and advisement to take higher level courses, tracking and ability grouping practices, test taking requirements of universities, course-taking patterns of students, under-prepared teachers at the secondary school level, aspirations or expectations that are lacking because of reduced numbers of role models, cultural and family pressures to work or marry early in life, and the cost of higher education. Students

from groups with low college-going rates get inadequate support at home, in their communities, in their high schools, and from colleges and universities. While these barriers listed in the University of California report address issues predominantly at the postsecondary level, many of these same barriers can be seen as Latino students move from the community college level to a four-year institution and ultimately to graduate or professional school.

Other scholars (McGregor, 2003) have found these barriers that discourage some first-generation Latino students from pursuing educational opportunities beyond community colleges: low income and the need for more than one breadwinner in the family; students' unfamiliarity with educational requirements and the transfer process; a cultural view that often discourages women from pursuing higher education; lack of role models within higher education and others who might serve as mentors; improper documentation and lack of residency status; difficulty of transferring credits from foreign institutions; and the institutions' rules, regulations, and values that are often foreign concepts to students who are immigrants or children of immigrants. Many of these barriers continue to exist through the graduate level. Since a graduate education at a health science center offers an even further leap for all students, especially minority students who often lack role models, many of these same barriers can be pointed to in the transition to this specific graduate institution. Mellander (2005) outlines some of the barriers that still exist for Latino students entering a medical school. While overt discrimination ended with the 1960s, attitudes change less quickly. Entrenched patterns still exist, especially when it comes to institutions steeped in tradition such as medical schools. Barriers at a health professions school, which includes health science centers, still include an over-reliance on standardized testing in the admissions process, an unsupportive institutional culture once admitted to graduate school, no demonstrated commitment to diversity from the administration, insufficient funding avenues, and

a lack of effective mentors. This list does not touch on the issues of cultural barriers or English-language skills that might exist for minority students, Latino students in particular.

Characteristics of Graduate Student Success

Out of the ashes, the phoenix rises, and out of the barriers to higher education, successful minority graduate students do emerge. People define success in a variety of ways, but almost all of these definitions have to do with attaining a goal. So for many people, success equals persistence. Several studies have looked at the essential ingredients for graduate school success, and several graduate students have penned books, articles, and helpful Websites detailing what they did that led to their graduate success (Alire, 1997; Enright & Gitomer, 1989; Greene, 2002; Pace, 1980; Padilla, n.d.; Tinto, 1998). This section will review a few of these characteristics very generally, leaving in-depth analysis for chapter 2.

Some of the characteristics known as obstacles or barriers to college student success can be turned inside out to account for the reasons a particular student might succeed. Research shows that succeeding in college, or completing a college degree, is a complex mix of institutional, societal, and personal characteristics. Some of those include family background, economics, pre-college educational attainment, student motivation, and quality and amount of effort exerted while pursuing a degree (Pace, 1980; Tinto, 1993). Tinto (1998) argued that students must be integrated into the academy both academically and socially to be successful. According to Padilla (n.d.), successful college students are “those who are academically talented, are supported in their quest for a college degree, exhibit a high level of motivation and commitment to their educational goals, exert a quality effort in their studies, and make

themselves at home in the academic and social cultures of the campus where their previous knowledge and experiences are valued and enlarged” (p. 3).

The Educational Testing Service, which administers the Graduate Record Examination, has done several studies to determine if the GRE does actually predict success in graduate school. To do these studies, researchers at ETS asked professors from around the country what skills and characteristics made students successful in graduate education (Enright & Gitomer, 1989). Enright and Gitomer (1989) made inferences about the importance of certain characteristics that result in student success based on what faculty members said were important aspects of graduate education. Good research skills were at the top of the list of important characteristics that graduate students should possess. The ability to exhibit behavior indicative of a professional in the field was also rated as important by faculty members who said this occurs through socialization into the profession. Other skills that are acquired in graduate school are writing, argumentation, and evaluation of research. According to Enright and Gitomer (1989), these skills are often acquired through modeling faculty behaviors.

The Problem

Latinos as a group are underrepresented among students receiving doctoral degrees and first professional degrees, which includes medical doctors and doctors of osteopathic medicine. Given the fact that 3.4% of the student population received doctoral degrees in 2002 and 4.8% of the student population received first professional degrees that same year, a serious deficit in the number of Latinos at this level of education exists. Currently, Latinos comprise 13% of the US population. Because of the changing population trends with the Latino population expected to increase to 25% of the US population by 2050, this imbalance in higher education success needs

to be addressed, not only to help with issues of health inequities among Latinos, but to provide the US with adequate numbers of healthcare providers and scientists; therefore, it is critical that the success rate of Latino students at health science centers be improved.

This study sought to determine the personal pathways of success for Latino students who chose to enter a health science center for graduate study and graduated. The study analyzed individual life histories, gathered through in-depth interviews of the students, to uncover the pathways to higher education success among Latino students at a health science center.

Discovering what pathways Latino students take that result in success in graduate or professional education is a first step in providing a better picture of what intervention tactics might work to help Latino students achieve graduate-level success in higher education. The research points to the importance of focusing on successful students to improve the success rate of Latino students in higher education (Padilla, Treviño, Gonzalez, & Treviño, 1997). This focus on successful students allows institutions, faculty, staff, and students themselves to understand just what it may take to be successful in higher education and allows for modeling of successful behaviors.

Purpose of the Study

This study answers some of the questions that researchers and practitioners have been asking regarding the education and success of Latino students in graduate education beyond the K-16 models, specifically at a health science center. By studying individual success stories of Latino students who have entered a health science center for graduate education and have graduated, we can determine some of the influences that may result in graduate success for the Latino student population.

Rationale of the Study

The need to understand how Latino students cope with graduate education is clear. National statistics show that while Latinos remain underrepresented in graduate education, they are becoming an increasingly important minority group in regard to population trends (Benitez, 1998; Laden, 2001). Without a plan to improve Latino participation at the graduate level, the US will experience severe shortages in qualified workers to fill top-level jobs and healthcare positions that will begin to open as the Baby Boom generation retires. This inevitability has been recognized by the national government and state governments throughout the nation, which is why such laws as the No Child Left Behind Act and the Texas Higher Education Coordinating Board's plan, Closing the Gaps by 2015, were developed—to close the gaps in K-16 education. Instituting the Hispanic Serving Institution Act during reauthorization of the Higher Education Act in 1993 was a step toward increasing the percentage of Latinos in higher education by providing funding specifically for institutions that serve a high percentage of Hispanic students, but little has been done to address the issues of graduate and professional education.

The number of Latino students who enter higher education is not proportionate to the number of Latino people who make up the US population (Justiz, 1995; “Revelations and Recommendations,” 2001). This fact then becomes a pipeline issue, resulting in fewer Latinos attaining a baccalaureate degree, resulting in even fewer Latino students entering graduate or professional schools (Cabrera & La Nasa, 2005; Sorenson et al., 1995). The result is a significantly lower success rate for Latino students in professional and graduate education. This rate, coupled with a significant increase in the Latino population, will result in an educational, social, cultural, and economic problem for Latinos and the US overall as the Latino population becomes the majority minority group during the 21st century (“Revelations and

Recommendations,” 2001). This fact is particularly evident in the health sciences, where the increasing Latino population poses an immediate as well as a continuing challenge to the healthcare profession and the health sciences. Attracting more Latino students into the health sciences will help address the lack of Latinos in the health professions and the health disparities that currently exist among Latinos. In 2001, the percentage of doctorates awarded to Latinos in science and engineering was 4.1% (NSF-CEOSE, 2004). In 2003, a total of 2,607 students graduated from medical schools awarding a doctor of osteopathic medicine degree. Of those, only 85 or 3% were of Latino descent (AACOM, 2004). In 2004, a total of 15,821 students graduated from medical schools awarding MD degrees. Of those only 485 were of Latino descent or only 3% (AAMC, 2005). Since no aggregated data exist for health science center students, these data reflect medical school student populations alone. Research has shown that underrepresented minorities are more likely to heed medical findings and medical advice from people who are like them. Minorities are also more likely to locate their practices in underserved areas with 31% of African Americans, 41% of Native Americans, and 33% of Latinos reporting an intention to practice in underserved areas compared to 18.4% of whites who reported such plans (IOM, 2003; AAMC, 2005; The Sullivan Commission, 2004), so an influx of Latino students into health science centers across the nation could help solve an impending healthcare crisis. Discovering what pathways students have taken to success in higher education at a health science center will help provide a better picture of what intervention tactics might work to help Latino students achieve success in higher education at that level. The success of Latino students at health science centers will certainly impact the status of the healthcare industry throughout the nation with the ultimate goal of reducing health disparities in the Latino population.

While many studies have focused on college preparation programs and ways institutions have addressed the need to level the playing field for Latinos in higher education, this study focuses on how particular Latino students view the playing field [higher education], providing a fresh perspective on individual success. Anecdotal evidence from Latino students questions the “one size fits all” approach of many professors and programs in higher education. This approach does not take into account the added hardships of being different culturally or in any other aspect. The role of minority-serving institutions might aid students to succeed in undergraduate education, and the current literature points to the role of these institutions in fostering success among undergraduates (Benitez, 1998; Carnevale & Rose, 2003; Laden, 1999; Laden, 2001). However, the vast majority of minority-serving institutions lack professional or graduate education, especially the newest minority institutions, Hispanic Serving Institutions (Benitez, 1998; Carnevale & Rose, 2003). These institutions might provide higher graduation rates for Latinos than predominantly white institutions, but students face a different world when they decide to continue their education at other institutions, specifically institutions that are designed to offer graduate education in medicine and the health professions. While some of the students in this study graduated from a Hispanic Serving Institution, the effects of HSIs on Latino students is not within the scope of this study.

Research Questions

This study aimed to answer the following questions:

1. What do Latino students perceive to be the reasons for their “success” in higher education at a health science center?
2. Can the factors that influence the success of Latino students at a health science center be categorized as family background, cultural background, educational background, and personal perceptions or goals? Or are the factors that influence the success of Latino students at a health science center unique? These influences have been derived from

previous studies and research (Adelman, 1999; Allen, 1999; Attiyeh, 1999; Cardoza, 1991; Carnevale & Rose, 2003; Cuádras & Pierce, 1994; Daniel, 1997; Enright & Gitomer, 1989; Flores, 1992; Gandara, 1982; Haro, Rodriguez, & Gonzales, 1994; Hernandez, 2000; Hurtado, 1992 & 1994; Hurtado, Hayes-Bautista, Valdez, & Hernandez, 1992; Justiz, 1995; Landry, 2002-2003; Loo & Rolison, 1986; Morales, 2000; Nettles, 1990; Nora, 1990; Nora and Cabrera, 1996; O'Brien & Zudak, 1998; Pace, 1980; "Revelations and Recommendations," 2001; Rinn, 1995; Smedley et al., 1993; Solberg, 1993; Tinto, 1993; Tornatzky et al., 2002).

3. Are there similarities in Latino students who "succeed" and graduate?

Significance of the Study

The significance of this study was stated in 1970 in a report from the Carnegie

Commission on Higher Education:

Increased minority participation in graduate education is an important national goal to be realized for the social, economic, intellectual, and cultural well-being of all persons. It is for the collective benefit of society that the representation of minority group persons among those earning advanced degrees is increased (p. 1).

So as far back as 1970, the Carnegie Commission on Higher Education was calling for more minority participation in higher education for the welfare of the entire nation ("A chance to learn," 1970). With the increased presence of Latinos in the population today, the need for increased participation, specifically from Latinos, becomes clearer every day, while the gaps between educational attainment of white students and Latino students continue to grow.

Ascertaining the reasons that specific Latinos have successfully negotiated higher education and have been successful at levels that have traditionally been inhospitable may help improve the environment for everyone.

National statistics show that while Latinos remain underrepresented in graduate education, they are becoming an increasingly important minority group in regard to population trends (Benitez, 1998; Laden, 2001). Without a plan to improve Latino participation at the

graduate level, the US will experience severe shortages in qualified workers to fill top-level jobs and healthcare positions that will begin to open as the Baby Boom generation retires.

Attracting more Latino students into the health sciences will help address the lack of Latinos in the health professions and the health disparities that currently exist among Latinos. Research has shown that underrepresented minorities are more likely to heed medical findings and medical advice from people who are like them (The Sullivan Commission, 2004), so an influx of Latino students into health science centers across the nation could help solve an impending healthcare crisis. The success of Latino students at health science centers will certainly impact the status of the healthcare industry throughout the nation with the ultimate goal of reducing health disparities in the Latino population.

Definitions

The term *Hispanic* dates back to official US government statistics of the early 1970s as a category to determine racial/ethnic background (Carnevale & Rose, 2003). Hispanic refers to a diverse group of Americans from Mexico, Spain, Central America, South America, and Spanish-speaking Caribbean islands. *Latino* and Hispanic are used interchangeably throughout this paper. Students who self-identified as Hispanic through application documents and graduation request documents were the population for this study.

The term Latino is the “grassroots alternative to the governmentally-imposed designation,” (Carnevale & Rose, 2003). The term is used to refer to the same diverse group that Hispanic refers to and is meant to delineate racial/ethnic status. Latino and Hispanic are used interchangeably throughout this paper.

Success as defined for this study is completion of all degree requirements and awarding of a college degree. For purposes of this study, the degree may be a doctor of philosophy, doctor of public health, or doctor of osteopathic medicine from a health science center.

As defined by the Association of Academic Health Centers' Website (n.d.), a *health science center* is a school of higher education that consists of an allopathic or osteopathic medical school, at least one other health professions school or program, and one or more teaching hospitals at major universities throughout the US. The medical school at the health science center in this study is an osteopathic medical school.

Graduate education is the study of a subject at an institution of higher education that will result in a master's degree or doctorate. Graduate education is generally undertaken after completing a bachelor's degree from an accredited institution of higher education.

Limitations

Specific study of students at a health science center is limited to those students who identify themselves as Hispanic on student information surveys at the point of entrance.

Delimitations

Specific study of graduates from one health science center in the southwestern part of the US limits this study, providing exploratory data that can result in confirmation of previous theories or development of new ones. The small number of recent graduates sampled creates another limiting factor. Also, the limited population of Latino students to choose from at one health science center creates another limiting factor; however, I purposefully chose this particular health science center because of its award-winning outreach programs. The purpose of

the study, to ascertain *pathways* of success for Latino students rather than to quantify success among Latino students, allows for the generation of data that may lead to further study. The findings indicate a beginning point from which subsequent studies at other health science centers can originate.

Assumptions

The use of life history research methodology and in-depth interviewing to gather information about the pathways that Latino students take to higher education success at a health science center means that certain assumptions must be made. One assumption is related to the technique of interviewing in that the researcher must assume that subjects are recalling events correctly. The use of the life history approach also assumes that subjects are reflecting on their life experiences thus far and giving appropriate weight to each experience. Another assumption is that all Latino students have self-identified upon entrance to the health science center.

Research Methodology

According to Gall, Gall, and Borg (2003), the purpose of educational research is to gain new knowledge about teaching, learning, and educational administration to improve educational practice. This study attempted to explain the pathways that Latino students take to educational success at a health science center. In explaining the pathways that specific students at a health science center take to reach educational success [graduation], administrators can focus on the similarities of the pathways and seek to improve the success rate for Latino students at a health science center.

To illuminate the pathways that Latino students take through higher education and to discover the possible reasons for their success at a health science center, the voices of the Latino students themselves are important. By assigning value to the voices of participants, in this case Latino graduate students who have been academically successful by graduating, researchers can uncover patterns or relationships among the participants within a community.

Life history analysis, as a form of qualitative research, focuses on the ability of the researcher to gain insights into a broader phenomenon by understanding the specific aspects of specific people's lives (Cole & Knowles, 2001). This methodology was chosen by the researcher for its attention to pathway analysis.

The interview technique used for this study was predominantly nondirective, since it allowed participants to discuss their pathways and recall the events that were most important to them. A set of preliminary questions was distributed to each participant prior to each interview, and the researcher encouraged each participant to help compose the interview questions. This approach stressed the collective nature of gathering data for life history research (Cole and Knowles, 2001). Four influences were covered in in-depth interviews. These influences were derived from previous studies and research (Enright & Gitomer, 1989; Marín & Marín, 1991; Pace, 1980; Padilla, n.d.; Tinto, 1998). The four influences were 1) family background, 2) cultural background, 3) educational background, and 4) personal perception and goals.

Each interview took place in person when possible, via telephone when not possible. The interviewing cycle for each participant took place during a 1-month period. Interviews were tape recorded and transcribed, then sent to each participant for his or her comments and approval. These transcripts were then coded using the mind mapping technique. Themes were also

generated by the researcher from the transcripts. A more detailed description of the research methodology is available in chapter 3.

Organization of the Dissertation

The remainder of the dissertation is organized as follows. Chapter 2 discusses the barriers to higher education for Latino students in more detail, drawing upon previous research to outline the theories that currently exist. The chapter outlines the characteristics of successful graduate students, looking at the theories of why successful students are successful and how that relates to the idea of barriers for Latino students in graduate education at a health science center. Chapter 3 outlines the research methodology for this study, defining life history, qualitative research, data collection, and data analysis. The chapter outlines the research strategies undertaken and explains why each strategy was chosen. Data from each of the individual participants is analyzed in chapters 4 through 7. Chapter 8 provides discussion of the data and recommendations for research and practice based on analysis of the data. An appendix follows that includes an example of questions asked during the in-depth interviewing process and questions used to put data analysis in context.

CHAPTER 2

LITERATURE REVIEW

Introduction

To answer the questions: What characteristics or factors exist among Latino students who persist in graduate education at a health science center; what do these Latino students perceive to be the reasons for their success in higher education; and are there similarities in students who succeed and graduate, a review of the literature on some of the barriers that have traditionally existed for Latino students in higher education was initiated. Particular attention was paid to previous research that addressed the issue of barriers for Latino students in graduate and professional education. Since this study focused on success, a review of the literature on success in minority students, particularly Latino students, was initiated as well. Particular attention was paid to previous research that addressed the reasons for success among minority students in graduate and professional education.

Research has shown barriers for minority students at the undergraduate level include: recent immigration to the US, English language proficiency, cultural issues, limited financial aid, skewed assessment tests as part of entrance requirements, lack of knowledge about college among parents and students, feelings of isolation and loneliness, poor academic preparation and opportunity, discrimination, and an inhospitable campus climate (Carnevale & Rose, 2003; Daniel, 1997; Justiz, 1995; Landry, 2002-2003; Nora, 1990; O'Brien & Zudak, 1998; "Revelations and Recommendations," 2001; Rinn, 1995; Tinto 1993). These barriers may also transfer to the graduate school level along with the added stress of fitting into academe at the graduate level and the intensified level of performance associated with graduate education.

According to two minority students, some of the barriers do transfer to graduate school. Camila Alire (1997) said that family and extended family play a large role in the lives of minority students, even providing students with the motivation they need to succeed in life. “The family is so important to minority students because it helps these young people develop and maintain self-esteem and self-confidence and to maintain their identity” (p. 41). This devotion to family runs so deep, according to Alire (1997), that students often make their decisions about what college to attend based on distance from family, with close proximity to family being the preference. When graduate education comes into play, the support that many minority families have given for undergraduate education evaporates. Family members don’t want the student to move away and pursue a different lifestyle, which could be seen as a rejection of family and culture. Minority students also face the double-edged sword of feeling isolated once they do move away to pursue their graduate education, since their main support system, the family, will be far away (Alire, 1997).

Kamala A.I. Greene (2002) not only discusses the isolation associated with being a minority student at a predominantly white institution, Greene offers tips for graduate students on ways to cope with feelings of doubt and despair as well as isolation that can be barriers to success. Greene (2002) tells minority students to choose battles wisely, find a mentor, stay in touch with other minority graduate students, remember long-term goals, and use white allies.

While the study of barriers to traditional higher education success can lead to an understanding of how and why students have overcome these barriers, study of success using this tactic takes a negative view of success by focusing on barriers or obstacles. While the role of barriers and obstacles does provide a point of differentiation between those who have opted-out of higher education or quit and those who have persisted, the idea of success can be viewed from

a more positive perspective as well. Harrington and Boardman's (1997) seminal study on successful individuals takes this tactic. Harrington and Boardman (1997) suggest that a strong sense of inner direction, long-term planning, and a reward orientation are important for pathmakers, i.e., people who originate from both humble and privileged backgrounds but blaze a successful path that other people would like to follow. This idea of inner-direction or motivation is a vital part of most studies on success.

Models or theories of success are practically non-existent at the graduate level, especially when specific study of Latino graduate students is undertaken. However, models or theories of persistence at the undergraduate level have been developed, with Tinto's theory of college student departure serving as the predominant schema for student retention and student attrition (Tinto, 1987). Tinto's theory of college student departure (1987), based on a longitudinal study from 1975 to 1987, seeks to explain student attrition among undergraduate college students. Tinto (1987) theorized that students enter college with a variety of personal, family, and academic patterns. Based on these predetermined differences, students are more likely to be motivated to attend class and are more likely to have varying personal goals. Students alter these predetermined differences based on interactions with people or systems within the institution. Positive experiences further integrate the student into the system and lead to retention and persistence toward graduation. Negative experiences reduce integration with the system, distancing the student from the institution, leading to marginality and ultimately withdrawal (Tinto, 1987). Since this theory is based on undergraduate attrition and persistence, its applicability to graduate students, particularly those at a health science center, is questionable. Pascarella and Terenzini (1991) question the applicability of this and other theories or models for higher education based on the changing face of higher education's clientele with increased

numbers of older students and minority students. Pascarella and Terenzini's (1991) assertion that such theories or models were developed during a time of different higher education demographics rings true when looking at how Latino graduate students have been integrated into the academy. Since Latino students at all levels often start in a position of marginality at institutions of higher education, their integration into the academy can be even more difficult and tenuous. The intersection or dichotomy presented by success and barriers is the heart of this study and will be explored first through the literature on these two constructs.

The Secrets of Success

Successful minority graduate students do emerge despite the barriers to higher education. People define success in a variety of ways, but almost all of these definitions have to do with attaining a goal. While success for this study is defined as graduation, many studies and theories equate success with persistence. Tinto (1987) refers to this idea of persistence in the context of success in his theory of college student departure. Several studies have looked at the essential ingredients for graduate school success, and several graduate students have penned books, articles, and helpful Websites detailing what they did that led to their graduate success (Alire, 1997; Enright & Gitomer, 1989; Greene, 2002; Pace, 1980; Padilla, n.d.; Tinto, 1998). This section will review characteristics of success, looking at the literature from undergraduate through graduate education to see how the examples of successful graduate students at a health science center used as study participants fit into previous studies on success.

Undergraduate Student Success

Some characteristics known as obstacles or barriers to college student success can be

turned inside out to account for the reasons a particular student might succeed. Research shows that succeeding in college at the undergraduate level, or completing a college degree, is a complex mix of institutional, societal, and personal characteristics, some of those including family background, economics, pre-college educational attainment, student motivation, and quality and amount of effort exerted while pursuing a degree (Adelman, 1999; Pace, 1980; Tinto, 1993; Tornatzky et al., 2002).

In a study from Polinsky (2003) on student retention, students were asked just prior to graduation, why they felt they had succeeded in completing their degrees. Graduates in the study said that self-determination and motivation were the most important factors in their success, followed by support from friends and family, support from college instructors, and support from college support staff. Almost 95% of the approximately 3,000 students surveyed said that self-determination and motivation were the reasons for their success. The next closest category, encouragement and support from friends and family, accounted for almost 40% of the responses (Polinsky, 2003). Polinsky did this study at a community college in Pennsylvania, but other researchers have also studied the importance of self-determination and motivation for success in college (Allen & Nora, 1995; Arcuri, Daly, & Mercado, 1982; Astin, 1975; Cardoza, 1991; Terenzini & Wright, 1987). Allen also found that motivation had a significant effect on persistence for minority students in his 1999 study of 581 freshmen.

In a study of low-income and minority undergraduate students in New England, four key areas were identified as influencing college success: pre-college preparation, financial aid, involvement at the institution and feelings of connectedness to the institution by the student, and attendance patterns (IHEP “Getting Through College,” 2001). The study, which included the results of an original survey, in-depth interviews with low-income and minority students enrolled

in four-year institutions in New England, and analysis of national data from the US Department of Education, discovered that pre-college preparatory programs aided in the success of low-income and minority students; adequate amounts of financial aid for low-income and minority students was vital for student success; grants and scholarships were also important for student success; attending college full-time was important to success; student involvement in campus activities and attachment to the institution was important to success; living on campus increased the likelihood of student success, as did taking advantage of work-study opportunities rather than off campus employment (IHEP “Getting Through College,” 2001).

According to Padilla (n.d.), successful undergraduate college students are “those who are academically talented, are supported in their quest for a college degree, exhibit a high level of motivation and commitment to their educational goals, exert a quality effort in their studies, and make themselves at home in the academic and social cultures of the campus where their previous knowledge and experiences are valued and enlarged” (p. 3). After conducting a study of Latino undergraduate students in 1992, Flores determined that there were differences between students who were academically successful and those who were not. The students who were academically successful brought attributes with them to college that they had attained in their youth—good grades, a high academic self-concept, the support of their family emotionally, and enough finances to complete their education without worries (Flores, 1992). Hernandez (2000) found in a qualitative research study that success among Latino undergraduate students was tied to a positive mental outlook rather than good grades. The students in this study reported that positive mental outlook, otherwise known as a high academic self-concept or the idea that one will be successful in college, was the most important factor in their college success (Hernandez, 2000). Other studies have also found that this idea of high academic self-concept, which can also be

associated with intrinsic motivation and self-esteem or a strong internal locus of control, is a major determinant in college success and success in life (Enright & Gitomer, 1989; Harrington & Boardman, 1997; Tinto, 1998).

Family support was also a determinant in college student success, according to Flores (1992). Other studies have shown that family plays a central role in the lives of Latinos, and this influence does not diminish across the generations (Haro & Gonzales, 1994; Hernandez, 2000; Hurtado et al., 1992). The family is a source of support for Latino students, providing a strong foundation that students can depend on. According to Hernandez (2000), meeting other Latino students who were successful or who were succeeding was also important to the success of Latino students at an undergraduate institution. Students who were successful academically were also drawn to the idea of community on campus, seeking out the support of students who were like them (Padilla et al., 1997). LeSure-Lester (2003-2004) found that the most successful Latino students were those who felt satisfied with their academic development and welcomed by faculty members. In essence, these students felt as if they had been accepted into the academic community.

The idea of community fits into Schlossberg, Lynch, and Chickering's (1989) theory of mattering/marginality. According to the theory, students must feel like they "matter" to be successful in college. This can be played out in a community setting whereby students seek a sense of community so they will matter (Pascarella & Terinzini, 1991). This sense of "mattering" can also be seen in the use of mentors among successful students (Arellano & Padilla, 1996; Parker-Redmond, 1990; Sedlacek, 1989).

Graduate Student Success

The previous theories and studies focus on success at the undergraduate level. Few studies have been undertaken to determine success factors at the graduate level, and none have focused exclusively on Latino students at a health science center. The studies that have been undertaken to study graduate student success find similarities between successful Latino undergraduate and graduate students. In 1982, Patricia Gandara interviewed 17 Mexican American women who had completed their graduate education, receiving JDs, MDs, or PhDs. She found that her respondents attributed their success to persistence, hard work, equality, and being comfortable in Anglo and Mexican worlds. In 1990, Nettles found that doctoral Hispanic students and African American students who interact with faculty perform better in class, have higher grade point averages, and are more satisfied with their doctoral programs than those students who do not interact with faculty. In 1994, Cuádriz and Pierce undertook a qualitative study to understand the experiences of Latinos in graduate school. The research described the emotional, physical, and intellectual transformations that had occurred, resulting in graduate school success for these students (Cuádriz and Pierce, 1994). In a publication in 2000, Morales, who studied Latinos in doctoral programs in the 1980s, revealed emotional and intellectual strategies used by Latino doctoral students to help succeed in their programs. She found that students who were successful challenged pedagogy and stereotypes in the classroom and rejected any negative messages (Morales, 2000).

The Educational Testing Service, which administers the Graduate Record Examination, has done several studies to determine if the GRE does actually predict success in graduate school. To do these studies, researchers at ETS asked professors from around the country what skills and characteristics made students successful in graduate education (Enright & Gitomer,

1989). Enright and Gitomer (1989) made inferences about the importance of certain characteristics that result in student success based on what faculty members said were important aspects of graduate education. As one might expect, good research skills were at the top of the list of important characteristics that graduate students should possess. The ability to exhibit behavior indicative of a professional in the field was also rated as important by faculty members who said this occurs through socialization into the profession. According to the study, much of the socialization is accomplished by modeling (Enright & Gitomer, 1989). Other skills that are acquired through modeling in graduate school are writing, argumentation, and evaluation of research. Modeling, according to Enright and Gitomer (1989), is facilitated by faculty who select students to work with them; therefore, being bright, motivated, and articulate as a graduate student are also important characteristics so faculty will select you to join them in a mentoring relationship. Having the social skills to relate well to faculty members is also advantageous for students in this process (Enright & Gitomer, 1989).

Other tasks that are considered important for graduate-level and professional success identified by Enright and Gitomer are “identifying significant problems for investigation; planning investigation of these problems; writing research proposals, papers, and reports; participating in collegial interactions and professional networks; and critiquing the ideas, proposals, and work of colleagues” (p. 5). So a set of identifiable skills are needed as are certain characteristics such as interpersonal skills, oral communication skills, creativity, and motivation. What Enright and Gitomer discovered was that the graduate education process is similar to an apprenticeship, and that the skills acquired by successful students are skills learned from their mentors. Enright and Gitomer (1989) also discovered a tentative list of competencies, based on interviews with faculty members who enumerated the skills necessary to be successful in

graduate school. These are skills that faculty members said were important for students to develop for their subsequent professional roles: communication, creativity, explanation, motivation, planning, professionalism, and synthesis.

Gregory M. Attiyeh (1999) hypothesized that variables such as student aptitude and achievement, financial support, demographic characteristics, and the characteristics of the student's degree program explained persistence at the doctoral level. Using longitudinal data on students enrolled in doctoral programs in five disciplines: biochemistry, economics, English, mathematics, and mechanical engineering from 1989 to 1993, Attiyeh concluded some generalities, although there were wide differences across disciplines. Students with certain characteristics were more likely to persist at more selective institutions. These characteristics were greater financial support, higher GRE verbal or quantitative scores, and a master's degree. Variables such as citizenship, gender, ethnicity, and age were not consistently related across the disciplines studied. Attiyeh was careful to differentiate between persistence and success in doctoral studies, noting that persistence is akin to retention, which is "a key element both in the success of students and in the effectiveness of doctoral programs" (p. 1). Previous studies on predicting success in doctoral programs cited in Attiyeh's study were from Zwick and Braun in 1988 and Zwick alone in 1991. Both studies were advanced prior to the initiation of the Hispanic Serving Institutions Act, which passed in 1993 with the reauthorization of the Higher Education Act. The first study from Zwick and Braun (1988) did not analyze differences associated with success based on minority group status. The second study conducted by Zwick alone in 1991 did find that there were higher rates of success for white students relative to underrepresented minority students at the doctoral level.

Pauley, Cunningham, and Toth (1999) found that among students completing a doctorate in education administration from the West Virginia University-Marshall University Cooperative Doctoral Program, a non-traditional EdD program, factors that related to completion of the degree were financial support, familial support, peer support, faculty support, chairperson support, and the motivation of the student. While some of these variables are found to be significant indicators of the success of all doctoral students, this particular study was very focused in its sample, leading to an inability to generalize the finding to this study.

Barriers to Success in Higher Education for Latino Students

Currently, Latinos are the least-educated racial group, with just over 11% of Latinos age 25 and older holding a bachelor's degree (Schmidt, 2003). In the same age bracket, 17% of African Americans, 27% of whites, and 47% of Asian Americans hold a bachelor's degree (Schmidt, 2003). According to the Hispanic Association of Colleges and Universities, this presents a nationwide problem since projections for growth in the Latino population will result in an under-educated, rapidly growing population in the US, comprised of predominantly Latinos (HACU "The Increasing Presence," 2000). This section will review the barriers to success for Latino students, looking at the literature from undergraduate through graduate education to see how the examples of barriers to higher education fit into the literature on minority, particularly Latino, success in higher education.

Undergraduate Student Barriers to Success

So just where are Latinos in higher education today? According to a report from the Pew Hispanic Center, (2004), Latino students are non-traditional. As a group, Latinos are

predominantly enrolled in community colleges, work while attending school, are first-generation college students, are low-income, have less academic preparation than their peers, and are concentrated in a small number of states and institutions throughout the nation (Santiago & Brown, 2004).

The National Center for Education Statistics (1995a) identified the following risk factors for students in attaining a college education: delaying enrollment, attending part-time, being financially independent, being a single-parent, working full-time, caring for a dependent, receiving a General Education Development certificate, and being a student who is classified as first-generation within the family to attend college. Higher proportions of minorities have multiple risk factors (NCES, 1995a). Risk factors can become barriers to higher education at all levels, from the beginning stages of the pipeline to the doctoral or professional degree stage, causing students to drop out.

A report commissioned by the Board of Regents for the University of California (Hayward et al., 1997), identified some of the barriers to higher education for historically underrepresented groups. According to the report (Hayward et al., 1997), the barriers included: less access to information, lack of counseling and advisement to take higher level courses, tracking and ability grouping practices, test taking requirements of universities, course-taking patterns of students, under-prepared teachers at the secondary school level, aspirations or expectations that are lacking because of reduced numbers of role models, cultural and family pressures to work or marry early in life, and the cost of higher education. The report (Hayward et al., 1997) found that students from groups with low college-going rates get inadequate support at home, in their communities, in their high schools, and from colleges and universities. While these barriers address issues predominantly at the undergraduate level, many of these same

barriers can be seen as Latino students move from the community college level to a four-year institution and ultimately to graduate or professional school.

A group of scholars from the University of Texas at Dallas published research on the barriers that discourage some first-generation Latino students from pursuing educational opportunities beyond community colleges. Many of these barriers continue to exist through the graduate level. The researchers (McGregor, 2003) cited these factors as barriers to transfer by Latinos at community colleges: low income and the need for more than one breadwinner in the family; students' unfamiliarity with educational requirements and the transfer process; a cultural view that often discourages women from pursuing higher education; lack of role models within higher education and others who might serve as mentors; improper documentation and lack of residency status; difficulty of transferring credits from foreign institutions; and institutions' rules, regulations, and values that are often foreign concepts to students who are immigrants or children of immigrants. Several studies (Allen, 1999; Cardoza, 1991; Hurtado, 1992 & 1994; Loo & Rolison, 1986; Nora & Cabrera, 1996; Smedley, Myers, & Harrell, 1993; Solberg, 1993) have found that the barriers that most impede minority student success include poor self-concept and an understanding of racism and the ability to cope with it [stress management] in an academic setting. Racism and discrimination have been found to impede the cognitive and affective development of minority students, resulting in marginalization (Smedley, Myers & Harrell, 1993; Smith, 1989 & 1992).

In a national survey of Latinos initiated by the Pew Hispanic Center (2004), Latinos cited the costs of education, discrimination, and the desirability of staying close to family as major reasons for why people fail to finish college. Almost 60% of the Latinos surveyed also said that receiving a poor high school education is the major reason why people do not get a college

degree (Pew Hispanic Center, 2004). Solberg (1993) found that three factors act as barriers to success for Latino students: academic stress, social stress, and financial stress. These three barriers can be seen as a lack of support systems available on campus to reduce the barriers of being under-prepared academically, lacking a sense of community, and lacking the financial means to continue higher education (Solberg, 1993). Morley (2003-2004) echoed these studies when assessing students at the University of Massachusetts Amherst, finding that racial/ethnic accountability, the pervasiveness of white culture on campus, and lower pre-college learning opportunities challenged the social and academic integration of minority students, particularly African American and Latino students. Morley (2003-2004) concluded that six racial and ethnic dynamics provide barriers to undergraduate minority students, particularly African American and Latino students, at a predominantly white institution. These barriers were: the role of family life, being placed socially by race and ethnicity, racial and ethnic accountability, the pervasiveness of white culture, the pursuit of a color-blind society, and the overrepresentation of minority students among weaker academic students (Morley 2003-2004). According to Morley's study (2003-2004), these attributes weakened student integration, which led to feelings of marginality.

Gumecindo Salas, vice president of governmental relations for the Hispanic Association of Colleges and Universities, said the Latino culture can provide a barrier for college attendance, since it strongly values family and family proximity ("ETS at a Glance," n.d.). "This can serve as an inhibitor for young Latinos who may have to turn down educational opportunities at faraway universities or forego pursuit of a degree altogether to care for or help support their families," (p. 2). Tornatzky et al., (2003) also emphasized the role of Latino culture in presenting barriers for students when attending higher education. Relying on family for emotional and financial support and the need to stay near home means that students may pass up higher education opportunities

to comply with culture (Tornatzky et al., 2003). The role of gender and the higher expectation of female presence near the home can also be seen as a barrier to pursuing higher education (Tornatzky et al., 2003). Tornatzky et al. (2003) hypothesized that ethnicity, gender, parental level of education, and the decision to leave home were associated with decisions to attend certain kinds of universities, particularly research intensive. They discovered that all of their hypothesized variables did provide a significant influence on the decision to attend a research university (Tornatzky et al., 2003).

A recent report issued from the Pew Hispanic Center (Fry, 2004) also found that Latinos' pathways through postsecondary education further imperil their progress and ultimate success. Fry (2004) found that Latinos, compared with white students, delay enrollment in college, have greater financial responsibility for family members, and live with family while in college rather than living in campus housing. The US Department of Education identifies delayed college entry as a major barrier to completing a college degree (NCES, 1995b). The US Department of Education also identifies increased family responsibilities, including financial dependents, as a significant factor in reducing college completion (NCES, 1995a). And finally, Astin (1993) and other researchers, have found that living on campus enhances the probability of degree completion. These studies mirror the concepts introduced by Tinto (1987) as reasons for student success or lack of success in his Theory of College Student Departure. In Tinto's model, students must feel as if they belong or become integrated into the institution to remain in college. Positive experiences further integrate the student into the system and lead to retention and persistence toward graduation. Negative experiences reduce integration, distancing the student from the institution, leading to marginality and ultimately withdrawal (Tinto, 1987). This sense of marginality is what Schlossberg et al.'s (1989) theory of mattering/marginality also shows.

According to the theory, students must feel like they “matter” to be successful in college (Schlossberg et al., 1989).

Self-concept or student motivation has also been determined to be a strong indicator of success or a barrier for minority students. Allen (1999) discovered that minority students who had a high level of motivation were more likely to persist from the freshman to sophomore years in college, while Cardoza (1991) found that educational aspirations or desire/motivation was the single most important predictor of persistence among Latinas in her study of the undergraduate persistence of Latinas. While this variable of motivation or self-concept is an indicator of success, it can be a barrier for many minority students when related to the concepts of marginalization when associated with minority status and discriminatory practices at institutions of higher education. Aguilar (1996) found that Latinas were more likely to face personal barriers, intracultural barriers, and extracultural barriers. Personal barriers such as lack of knowledge on how to achieve goals, fear, lack of self-esteem, stress, and self-doubt impeded Latinas’ educational progress; intracultural barriers such as family responsibilities and role expectations often served as barriers for Latinas, and extracultural barriers such as punishment for speaking Spanish and teachers’ negative attitudes and statements helped to keep the personal barriers active (Aguilar, 1996).

In a longitudinal study (Grandy, 1998) among minority students who had tested as having a high-ability for science, engineering, and mathematics, these barriers continue to impede minority students. According to Grandy’s model (1998), the biggest impediment for minority students was lack of support for minority students. While Grandy (1998) found that minority support had little effect on college grades, it did influence science ambition, attitudes, enjoyment, and willingness to make a career commitment among the students who were surveyed. Taken in

conjunction with the previous findings that self-concept and motivation are the largest determinants of minority student success, Grandy's (1998) findings put discrimination as the most lethal barrier for minority students. Since a graduate education at a health science center offers a leap for all students, especially minority students, many of these same barriers can be pointed to in the transition to this specific graduate institution.

Graduate Student Barriers to Success

A survey undertaken by Tam and Rousseau (2000-2001), questioned minority students pursuing a master's degree in special education at an urban university and echoed some of McGregor's (2003) findings. The variables that students said affected their ability to pursue doctoral study were finances, family responsibilities, intellectual challenge, and self-confidence (Tam & Rousseau, 2000-2001). A recent article by Mellander (2005) outlines some of the barriers that still exist for Latino students entering a medical school. While overt discrimination ended with the 1960s, attitudes change less quickly. Entrenched patterns still exist, especially when it comes to institutions steeped in tradition, such as medical schools (Mellander, 2005). Barriers at a health professions school, which includes health science centers, still include an over-reliance on standardized testing in the admissions process, an unsupportive institutional culture once admitted to graduate school, no demonstrated commitment to diversity from the administration, insufficient funding avenues, and a lack of effective mentors (Mellander, 2005). This list by Mellander leaves out the issues of cultural barriers or English-language skills that might exist for minority students, Latino students in particular.

Latino students may face many barriers, which inhibit their opportunities for higher education success (HACU, "The Increasing Presence," 2000). When Padilla (n.d.) makes the

argument for studying student success stories, he makes an almost obvious assertion that needs to be restated for our purposes when analyzing barriers to college graduation and success: “In short, successful students possess expert knowledge about campus barriers that allows them to take effective action to avoid or overcome those barriers” (p. 5). The barriers that must be overcome by a particular student are particular to each campus and each student. Many barriers cut across campuses and students, but how each barrier interplays with the campus and the student will likely influence the student’s ability to overcome the barriers and experience success. Padilla (n.d.) found four classes of barriers for minority undergraduate students at a large public university in the Southwest. The classes were: discontinuity barriers, barriers experienced as lack of nurturing, barriers related to lack of presence on campus, and resource barriers. Some examples of discontinuity barriers were transitioning from a small town to an urban setting or vice versa, learning to live life as an adult, and coming to terms with delaying current opportunities to work and earn money for the delayed benefits of a higher education that will result in a higher salary. Lack of nurturing can involve lack of family support, a perception on the part of students of lower expectations from faculty and staff, and a lack of minority role models on campus. A lack of presence on campus is related to a lack of nurturing, including racial isolation, a lack of minority role models and mentors, cultural isolation, a lack of visible minority support groups, and a lack of minority issues integrated into the curriculum. The final class of barrier identified by Padilla (n.d.) is resource barriers. Plain and simple, college is expensive. The actual costs of attendance are high, especially for the poorest students. Many Latino students lack the funding to attend college, and they also have problems with the financial aid system.

According to a study by Granados and Lopez (1999), minority graduate students face the same difficulties that all students face as they transition from undergraduate to graduate study, with several additional challenges. These challenges or barriers include: lack of role models and mentors, limited faculty awareness of their needs and concerns, lack of faculty support for minority student research, lack of a minority student support community, and lack of a mechanism that encourages development and maintenance of social and professional networks for students (Granados & Lopez, 1999). Laura Rendón (1994) found that Latinos are more likely to be first-generation students providing these additional issues: distrust of institutional infrastructures, fear of failure, fear of asking questions, fear of being perceived as ‘stupid’ or ‘lazy,’ cultural separation, doubts about being ‘college material,’ trauma associated with making the transition to college, and being intimidated by the system. Research by Shirley Vining Brown (1994) echoed this finding, with a focus on financial problems for all students hindering graduate enrollment, but especially for minority students. In her research, Brown (1994) discovered a parallel financial hardship for all graduate students based on the idea that students should pay for graduate education themselves, but she also discovered a difference between the motivation of majority and minority students, with minority students having greater doubts than majority students.

In 1997, the College Board organized a National Task Force on Minority High Achievement to address the issue of chronic shortages of underrepresented minorities in higher education, particularly at high levels of academic achievement (National Task Force, 1997). From their research, the Task Force concluded that the minority high achievement problem was far-reaching, extending to academic underachievement by minorities at all socioeconomic levels, not just the lowest socioeconomic levels. The Task Force concluded that this pervasive

underachievement by minority students is related to several barriers that have been identified by various research studies of minority achievement in education and higher education: poverty, schools with inadequate resources, racial and ethnic prejudices, limited educational resources of families and communities, and cultural differences. In particular, the Task Force found that school and family instability is one of the greatest poverty-related obstacles to high achievement among minority students. Poorer families tend to move more frequently than more well-off families, resulting in disruption of education. This disruption at the lowest levels of education has domino effects, even reaching into graduate-level education, because once a student falls behind, it is nearly impossible for him or her to catch up. A high turnover of students also affects those students who don't move, because the curriculum slows down for all, not just those coming and going. Teachers are often less experienced at poorer schools in all levels, have fewer credentials, and come and go more quickly. The Task Force also asserted that differences in the educational level of parents is a significant source of the achievement gap. Research (Schmidt, 2003) has shown that parents who earn college degrees are more likely to support their children's educational attainment than parents with a high school education or less. Well-educated parents are more able to help their students with coursework and provide enrichment opportunities to help their children succeed. Lowered expectations of minority students by teachers, lack of self-confidence by the students themselves because of negative stereotypes, and lowered academic effort by the students because of a belief that success in school is only for white or Asian students were ways that lowered expectations in educating minority students (National Task Force, 1997). The Task Force also found that cultural differences do contribute to achievement gaps, including a lack of culturally-friendly experiences for students in the curriculum as well as differences in how communities and families support student success at all levels.

Summary

Research shows that succeeding in college at the undergraduate level or completing a college degree is a complex mix of institutional, societal, and personal characteristics, some of those including family background, economics, pre-college educational attainment, student motivation, and quality and amount of effort exerted while pursuing a degree (Adelman, 1999; Pace, 1980; Tinto, 1993; Tornatzky et al., 2002). The idea of high academic self-concept, which can also be associated with intrinsic motivation and self-esteem, is a major determinant in college success and success in life. In studies of Latino students, family support is also a major determinant in college student success (Flores, 1992; Haro et al., 1994; Hernandez, 2000; Hurtado et al., 1992). These theories and studies informed the focus of this study on success, taking what is known at the undergraduate level and applying it to a more specific setting, a health science center, to determine success factors for Latino students.

Research has also shown that barriers for minority students at the undergraduate level include: recent immigration to the US, English language proficiency, cultural issues, limited financial aid, skewed assessment tests as part of entrance requirements, lack of knowledge about college among parents and students, feelings of isolation and loneliness, poor academic preparation and opportunity, discrimination, and an inhospitable campus climate (Carnevale & Rose, 2003; Daniel, 1997; Gandara, 2003; Justiz, 1995; Landry, 2002-2003; Nora, 1990; O'Brien & Zudak, 1998; "Revelations and Recommendations," 2001; Rinn, 1995; Tinto 1993). These barriers to undergraduate students informed this study at the graduate school level along with the added stress of fitting into academe at the graduate level and the intensified level of performance associated with graduate education at a health science center. Several studies (Allen, 1999; Cardoza, 1991; Hurtado, 1992 & 1994; Loo & Rolison, 1986; Nora and Cabrera, 1996; Smedley

et al., 1993; Solberg, 1993) have found that the barriers that most impede minority student success include poor self-concept and an understanding of racism and the ability to cope with it [stress management] in an academic setting. These studies informed this research through a focus on academic self-concept as an influence in the form of personal perceptions and goals of the student.

The primary interest of this study was to determine the personal pathways of success for Latino students who chose to enter a health science center for graduate study and graduated. The research points to the idea that the most important reasons for Latino students' success are also the most important determinants of Latino students' lack of success. This dichotomous relationship between success and barriers informed this particular study through the focus on influences rather than success or barriers. According to the research, family support or lack of family support can act as a determinant of success or as a barrier; motivation or self-concept can act as a determinant of success or as a barrier, and racism or discrimination can act as a barrier unless successfully negotiated through high self-concept or family support, with family being defined in a global rather than familial sense. These determinants of success, which may also be barriers, informed the dichotomous nature of this study, alluding to the idea that individual differences may persist.

Ultimately, it is up to the Latino students themselves to determine what are the reasons for their success in higher education at a health science center. Can the factors that influence the success of these particular Latino students at a health science center be categorized as family background, cultural background, educational background, and personal perceptions or goals? Or are the factors that influence the success of Latino students at a health science center unique? The research (Adelman, 1999; Allen, 1999; Attiyeh, 1999; Cardoza, 1991; Carnevale & Rose,

2003; Cuádriz & Pierce, 1994; Daniel, 1997; Enright & Gitomer, 1989; Flores, 1992; Gandara, 1982; Haro et al., 1994; Hernandez, 2000; Hurtado, 1992 & 1994; Hurtado et al., 1992; Justiz, 1995; Landry, 2002-2003; Loo & Rolison, 1986; Morales, 2000; Nettles, 1990; Nora, 1990; Nora and Cabrera, 1996; O'Brien & Zudak, 1998; Pace, 1980; "Revelations and Recommendations," 2001; Rinn, 1995; Smedley et al., 1993; Solberg, 1993; Tinto, 1993; Tornatzky et al., 2002) points to these four influences as determinants of academic success. The intersection or dichotomy presented by success and barriers was the heart of this research and has informed this study.

CHAPTER 3

RESEARCH METHODOLOGY

Introduction

To illuminate the pathways that Latino students take through higher education and to discover the possible reasons for their success at a health science center, the voices of the Latino students themselves are important. Qualitative research methods assign value to the voices of participants in a study (Watson et al., 2002). By assigning value to the voices of participants, in this case Latino graduate students who have been academically successful by graduating, researchers can uncover patterns or relationships among participants. This means participants tell their stories in the context of their own lives, constructing meaning that helps them create a framework for dealing with the world they have encountered. According to Sharan B. Merriam (1998), reality is constructed by individuals, and it is the researcher's job to understand the reality created by these individual study participants to determine how they make sense of the world. Therefore, meaning or reality is embedded in people's experiences, which is why it is imperative to understand lives lived or experiences from the participants' perspective. This introduces the research framework in which this study was conducted: a life history analysis. The use of a qualitative research study using life history poses an inherent problem, since the researcher is the primary instrument for collecting data. Overcoming this problem and describing the logic behind using qualitative research, in particular the life history technique, will follow in the remainder of this chapter.

The purpose of educational research is to gain new knowledge about teaching, learning, or educational administration to improve educational practice (Gall et al., 2003). This study describes the pathways that particular Latino students have taken to educational success at a

health science center. The intent of this study was to also make meaning of those pathways. In analyzing the pathways that specific students at a health science center took to graduation, administrators can focus on the similarities of these pathways to find ways to improve the success rate for Latino students at a health science center, in short, to improve educational practice.

Characteristics of Qualitative Research

Qualitative research provides an open, flexible, and emergent approach to the phenomenon under investigation, which frequently provides a fundamentally more concrete image of the phenomenon than a questionnaire (Flick, Kardoff & Steinke, 2004; Merriam, 1998). In qualitative research, there is the idea of remaining open to what the data show; therefore, forming hypotheses in advance is not standard as in quantitative research and analysis (Flick et al., 2004). Qualitative research studies start with research questions or objectives, providing a more fluid research methodology based on how the research project unfolds as data are collected. The process of qualitative research is based on a sequence of decisions. Each decision builds on the next, and the research process differs based on subsequent decisions and how those decisions interplay with previous decisions. This leads to an anomaly in qualitative research: Questions must be designed clearly and unambiguously but allowed to materialize through the data gathered in the process, which means the research questions may change (Flick et al., 2004).

Several assumptions guide qualitative inquiry. Thomas Schram (2003) calls these assumptions, “guiding assumptions of qualitative inquiry.” The first of Schram’s (2003) assumptions is that understanding of the social world is gained through direct experiences in a real-world setting. This is a naturalistic approach to inquiry placing more value on the

participants' perspectives. The second assumption is that the constructing of knowledge is both interactive and intersubjective. What this means to qualitative inquiry is that the research affects the research, and the research affects the researcher, making for a constant attentiveness to the involvement and reflexivity of the researcher. This assumption informed this study since the context of the researcher's ever-changing relationship to the participants was analyzed. The third assumption is that sensitivity to context must be undertaken so the phenomenon under examination must be studied in the context in which it occurs, whether that is literally studying the phenomenon in its context, or figuratively putting the phenomenon in context upon analysis of data. This assumption informed this study because of the attention given to context within this section, further relating the participants' success through context.

The fourth assumption is that the researcher must pay attention to particulars. Because of the depth with which a phenomenon is studied, qualitative researchers pay attention to the particulars in an attempt to shed light on large issues. This informed the research for this study as individual graduates from a health science center were chosen as units of analysis to gain a more global perspective on success. The fifth assumption is that qualitative research is fundamentally interpretive, which plays into the idea of shedding light on issues at a global level (Schram, 2003). According to Schram (2003), that means "that qualitative inquiry is not a search for knowledge for knowledge's sake [or for knowledge that is simply 'out there'], but a search for the significance of knowledge" (p. 10). This assumption informed the inquiry in this study since the researcher made recommendations on how knowledge gained from this research can affect further research and actual practice for student success in the health sciences. All of these assumptions informed the idea of the inquiry undertaken for this study, and all of these

assumptions informed the logic behind studying successful Latino graduates from a health science center using life history analysis, which focuses on depth of inquiry.

Life History Analysis

Life history analysis, as a form of qualitative research, focuses on the ability of the researcher to gain insights into a broader phenomenon by understanding the specific aspects of specific people's lives (Cole & Knowles, 2001). A life history is a retrospective account by an individual that is prompted by another individual (Watson & Watson-Franke, 1985). The account is usually written, or the subject is recorded, and the life history provides information on the participant's life in whole or in part. The recollection occurs during a limited time frame so the participant maintains a consistent perspective. Life histories can sometimes provide more insight than other more elaborate research techniques, which is one of the reasons why life history research was chosen as a method of inquiry for this study (Watson & Watson-Franke, 1985).

Life history research was also chosen for its attention to pathway analysis. Since this study is focused on pathway analysis, life history research seemed to be a logical choice as a research tool. Also, because I was familiar with the setting where the research participants had attended school, and somewhat familiar with three of the four research participants, life history research seemed to make sense. Because of its attention to context as well as in-depth inquiry, life history research is more likely elicited from research relationships that are more intimate in their design and practice (Cole & Knowles, 2001).

Cole and Knowles (2001) advocate a more fluid relationship between researcher and research participants in life history research, blurring what are considered the normal boundaries of distance between researcher and research participant. Their focus is on care, sensitivity, and

respect in the research process when undertaking life history research, thereby including research participants in the production of knowledge. The Cole and Knowles (2001) approach informed this study. I found this approach most effective since the participants are all educated in the process of collecting research, and at least two of the participants are currently active in ways to increase minority participation in healthcare or health-related fields. Because context of the inquiry weighs heavily into interpretation of life history analysis and validity of its findings, this aspect of the research methodology will be covered in a separate section.

Context of the Inquiry

As part of the context of the inquiry, it is imperative to not only look at the characteristics of the health science center where the students attended college, but my relationship to the topic, and my relationship to each participant in the study prior to collecting data. These factors informed this study and were kept in mind during data analysis. To maintain an open and transparent inquiry, the topics associated with context of the inquiry will be discussed in-depth in this section. A list of nine questions from Watson and Watson-Franke (1985) was also used to address further issues of context for each of the participants. The nine questions are located in the appendix. The questions were answered for every interview with each research participant. Although the answers to some questions remained the same from one interview to the next, all applicable questions were answered each time. Two of the questions will be addressed in this section since they are constant: 1) How well did the investigator know the subject, and what was their relationship; and 2) What were the investigator's own preconceptions about the culture, the subject, and the data-collecting situation, and what self-perceived theoretical commitments did she have that might have influenced how she collected, arranged, and interpreted the material.

Investigator's Relationship to Subject Matter

Although I am not a person of Latino descent, I do share the similarity of first-generation college graduate. That alone is the similarity that I have with this topic and with two of the four participants; however, my firm beliefs in the idea of equality and the importance of education present a perspective that could color the objectivity of this study.

I may not be of Latino descent, but as a woman, equality in education has been ingrained in me from an early age. As a young girl, when people would ask me what I wanted to be when I grew up, I would say a marine biologist. No one in my immediate family had ever given me an indication that certain fields were more difficult for girls/women to work in, or that I could not become a marine biologist because I was a girl--quite the contrary. My mother had broken ground as a young woman, graduating from high school early and moving to the city to help support her family. She had moved up in business and had clearly established herself as a serious businesswoman. When she married my father, he convinced her to stop working when she became pregnant with my brother. She did not work outside of the home again until after my father's death when I was in high school. My father did, however, encourage me to do well in school with the idea that I would go to college.

The only time I can remember being discouraged from a career goal was when my brother-in-law began dating my sister. He had asked me what I wanted to be when I grew up, and again I said a marine biologist. He said, "You can't do that. Girls don't become scientists." My sister quickly retorted, "She can be whatever she wants to be." So a high regard for my abilities and a clear indication that education was important were instilled in me from my earliest memories. When I began encountering the world at large, I began to understand my brother-in-law's assertion. His belief was echoed in the words, attitudes, and biases of many people that I

met. As a naturally stubborn person, these attitudes and beliefs motivated me even more to be successful and achieve my goals. Although my goals may have changed—I no longer want to be a marine biologist—the push to work harder, do better, and change people’s minds continues.

One of my best friends from high school is a Latina woman. When her sister went to college, she was met with similar attitudes and beliefs regarding Latinos. Until that time, the idea that discrimination would exist for Latinos in higher education had not occurred to me. My close relationship with my friend and her family led me to look at this issue even further as the years progressed. An internship in Mexico during my graduate education sealed my bond with the Latino culture and its people. So while I may not be linked to the Latino culture by birth, I am linked to the Latino culture by choice. It is this choice, my firm belief in the social mobility inherent in higher education, and my passion for equality that informed this study.

Participant Relationship with Investigator

To maintain the anonymity of subject participants, I asked each research participant to choose a pseudonym. The four participants chose their occupation as a pseudonym; therefore, the research participants are known throughout this study as the Family Doctor, the Nurse, the Scientist, and the Internist.

The Family Doctor

The first research participant, representing the medical school at the health science center being studied, was recommended to me by several different people. These people described this person in general terms, telling me about his life, where he was from, how he had grown up [what they knew of it], and what a nice person he was. I had never met him prior to his

participation in this study, so the only knowledge I had of him was characterizations from other faculty members, staff, and students.

The Nurse

The second research participant, representing the School of Public Health at the health science center, was recommended to me by several people. While these people recommended the Nurse, I already knew her. The semester before her graduation from the health science center, the School of Public Health had hosted an anniversary celebration. I had been on the committee planning the celebration, and her company had purchased a table at the event. I saw her there, but did not realize she owned the company that had purchased the table. It was not until I was contacted by her major professor that that information suddenly made sense to me. The Nurse had done her dissertation on living wills. She defended her dissertation on the day Terri Schiavo had died, so the Nurse's major professor contacted me to see if media outlets would be interested in talking with the Nurse about her findings. I initially contacted the Nurse and spoke with her about the story. For a few days, we talked several times, scheduling times to meet with media for interviews and photo opportunities. After that week of concentrated activity, I did not speak with the Nurse again until I asked her to participate in this study.

The Scientist

The Scientist is the only participant representing the Graduate School of Biomedical Sciences at the health science center being studied. He was also the only Latino doctoral graduate from the Graduate School of Biomedical Sciences during the 2004-2005 academic year. I have known him for almost a year. I have known about him for much longer, because he was a

favorite student of many faculty members in the Graduate School of Biomedical Sciences. Smart and outgoing, the Scientist had won a prestigious fellowship in 2004 but had discovered he had testicular cancer during the fellowship. He spent much of fall 2004 battling cancer, and the first time I saw him, he was thin and bald. A faculty member pointed the Scientist out to me as he walked out of a meeting where students from the health science center were meeting with potential students from a Hispanic Serving Institution visiting the campus that day. The Scientist spoke but left shortly afterward. Later, I discovered he had been ill that day, but he came to the meeting anyway. A faculty member told me the Scientist's whole story, at least his whole story at that time, later that same day.

After that initial meeting, the Scientist and I talked on the telephone, and I scheduled a face-to-face interview with him. When he arrived in my office, he was a very different man than he had been when I saw him in fall 2004. He had a full head of dark, curly hair and had gained some weight. He looked decidedly healthier and happier than when I initially saw him. We had scheduled the meeting to talk about his recent award from the Graduate School of Biomedical Sciences and to discuss his life for a feature story I was writing about him. In the hour he was in my office, we discussed his early education, his family, his wife, his cancer, and what his plans for the future were. He e-mailed me a few days later, saying our conversation had been the first time he had discussed his battle with cancer, and he appreciated the opportunity I had given him to deal with some of the issues he had not been able to deal with thus far. A few months later, I received an e-mail from the Scientist about the defense of his dissertation. He invited me to attend, and I did. I talked to him a few minutes before the defense and asked if he was nervous. I talked to his mentor, other faculty members who were at the defense, his wife, his mother, his father, and some of the room full of other graduate students who were in attendance. A few

weeks later, I wrote the feature story about the Scientist and sent it to him for his approval. He told me that he and his wife would be leaving for Oregon at the end of September, so we scheduled a time to meet for lunch. From that point on, our association continued for this study.

The Internist

The fourth research participant, also representing the medical school at the health science center being studied, said yes to my e-mail request to participate in this study. I had never met him prior to his participation in this study. The only knowledge I had of him was a photograph I discovered in a class photo at the health science center.

Characteristics of the Health Science Center

The health science center being studied began as a private, medical school in 1966, awarding its first doctor of osteopathic medicine degrees in 1974 to a class of 18 with no Latinos in the class. According to institutional history provided in the institution's *Fact Book* (2006), the third class of graduates in 1976 contained its first Latino graduates. Latinos have been in every graduating class of doctors of osteopathic medicine ever since. In most years, the number of Latino graduates has remained in the single digits, with a high of 13 graduates earning the doctor of osteopathic medicine degree in both 1996 and 1998 (*Fact Book*, 2006).

In 1975, the private, medical school became a state college under the auspices of a public university. The institution continued as a medical school awarding only a doctor of osteopathic medicine degree until 1993 when master's and doctoral degrees in biomedical sciences were added to the degree programs, thereby establishing a health science center. The first degrees in biomedical sciences were awarded in 1994.

In 1995, the university added a master's of public health degree. The first students were admitted to the program in fall 1995. The degree offerings were again expanded in 1996, with the university offering its first undergraduate degree, a bachelor's degree in physician assistant studies. The first students who graduated with that degree graduated in fall 1999. That same year, the physician assistant studies program moved to a master of science degree in physician assistant studies, and all undergraduate programs ceased. A doctoral degree in public health was added in 1999, and a School of Public Health was established. The first class of doctoral graduates in public health included two Latinos out of six in 2004. Since that time, the School of Public Health has graduated the highest percentage of Latino doctoral students among all schools at 33% (*Fact Book*, 2006).

This health science center has graduated 246 Latino students during its entire history as of the 2004-2005 academic year. Some of those Latino students received bachelor's degrees [three in physician assistant studies]. Some received master's degrees [six in physician assistant studies, 19 in biomedical sciences, and 36 in public health]. Some received doctoral degrees, [five in public health, 10 in biomedical sciences, and 167 doctors of osteopathic medicine]. In all, 7% of the graduates of this health science center, as of the 2004-2005 academic year, were of Latino descent (*Fact Book*, 2006).

Design of the Study

Qualitative research follows an emergent research design (Gall et al., 2003); however, an initial research design was outlined to begin the study. This section will provide a brief sketch of the initial design, providing more detail on how the study progressed in subsections. A health science center in the southwestern part of the US was chosen for this study, mainly because of

the convenience of sampling for the researcher and the ready availability of potential research participants willing to undergo such intense scrutiny. This particular health science center is considered a model institution by several governmental agencies when it comes to recruitment and retention of underrepresented minority students. In conforming with Schram's (2003) assumptions of qualitative research and to shed light on global issues by paying attention to particulars, the researcher used individual graduates from this health science center as units of analysis.

Qualitative research, in particular life history research, is designed for participants to tell their stories in the context of their own lives, constructing meaning that helps them create a framework for dealing with the world they have encountered. Researchers can take this meaning and uncover patterns or relationships among the participants within a community. A goal for this study was to uncover the patterns in participants' pathways to educational success at a health science center and make meaning of those pathways.

Sampling

In the initial phase of designing this study, at least two pieces of information had to be discovered: One was the number of students who have graduated from the particular health science center being studied, and the other was the number of students who graduated with each degree offered. This information was needed for sampling purposes. This information was presented in detail in the previous section, but it will be reviewed in this section in the context of sampling. In all, 7% of the graduates of this health science center as of the 2004-2005 academic year were of Latino descent. The four Latino students who were participants in this study were chosen from the 11 total Latino students who graduated with doctoral degrees in 2004-2005,

making up approximately 36% of the total population (*Fact Book*, 2006). The two participants from the medical school comprised 29% of the medical school population; the one participant from the School of Public Health comprised 33% of the SPH population, and the one participant from the Graduate School of Biomedical Sciences comprised 100% of the GSBS population that year (*Fact Book*, 2006).

The population for this study is self-identified Latino students who completed a doctoral degree at this health science center. To keep the focus of this study on the ultimate success of Latino students at a health science center, students who graduated with a bachelor's degree or a master's degree were removed from the pool of potential interviewees. That excluded 64 former students from the potential pool of 246 Latino graduates of this health science center as of academic year 2004-2005, leaving the number of possible interviewees at 182 (*Fact Book*, 2006).

Since the medical school has been in existence longer than any of the other schools, the total number of Latino graduates from the medical school is larger at 167. So 91.7% of the total number of Latino graduates with a doctoral degree from the health science center have received doctor of osteopathic medicine degrees. Because of this skewed pool of potential interviewees, the researcher reduced the number of potential interviewees even further to provide a more accurate picture of all fields represented at this particular health science center.

The latest school to begin awarding a doctoral degree was the School of Public Health, so the researcher reduced the pool of potential interviewees based on the date of the first doctoral degrees awarded by the School of Public Health. To do this, the institutional *Fact Book* (2006), based on information from the Office of the Registrar and the Office of Strategic Evaluation and Analysis, was consulted for clarification. The first doctoral degrees were awarded in the School

of Public Health in the 2003-2004 academic year; therefore, the academic year 2003-2004 was initially chosen as the population from which to find potential interview participants.

In the 2003-2004 academic year, the institution had more Latino graduates than in any previous year with 26; however, 17 of those graduates received master's degrees, eliminating them from the potential pool of interview participants. Only 9 doctoral students remained in the potential pool. Of those 9 doctoral students, 7 received the doctor of osteopathic medicine degree, and 2 received the doctor of public health degree. The School of Biomedical Sciences had no doctoral graduates of Latino descent in the 2003-2004 academic year, which posed another problem. Since a lack of potential graduates of Latino descent from the School of Biomedical Sciences would not be representative of its total proportion of Latino graduates to date, which is almost 9%, the academic year of 2003-2004 was eliminated (*Fact Book*, 2006).

In the 2004-2005 academic year, 7 Latino students earned the doctor of osteopathic medicine degree, 3 Latino students earned the doctor of public health degree, and 1 Latino student earned a doctor of philosophy degree from the Graduate School of Biomedical Sciences. Because the academic year 2004-2005 had representatives from each school that currently offered doctoral degrees at this health science center, I chose the academic year 2004-2005 as the population from which to sample. Former students who participated in the study were chosen based on convenience sampling, the snowball effect, and willingness of potential interviewees to participate in the study. Four graduates from the population of 11 agreed to participate in the study. Two participants graduated from the medical school; one participant graduated from the School of Public Health, and one participant graduated from the Graduate School of Biomedical Sciences.

Pre-Interview Testing

Prior to collecting data from each participant, a list of possible questions for each interview was formulated. The semi-structured interview questions and a rough draft of the project was presented to a test participant for review. I chose this person as a first-read subject, because she was also a graduate from the health science center. Use of a first-read subject fits into the Cole and Knowles' (2001) idea of knowledge-making. This pre-interview testing helped inform the initial framework of the semi-structured interview. From this first read and subsequent suggestions, several insights were drawn: First, a framework for data collection would need to be derived; second, an initial get-to-know you meeting or discussion would need to be scheduled with each participant to engage his or her help in data collection; and third, the data collection process would then have to flow based on these meetings and the ensuing interviews with each participant.

After this first-read test, the semi-structured interview questions were transformed into a list of topics to expedite an initial framework for data collection. This is consistent with the Cole and Knowles (2001) approach to interview data collection in life history research, since they suggest putting together a list of topics as a model for interviewing participants. The list of topics or influences on Latino students who are successful in graduate education at a health science center included: 1) family background, 2) cultural background, 3) educational background, and 4) personal perceptions and goals. I derived these influences from previous studies and research (Adelman, 1999; Allen, 1999; Attiyeh, 1999; Cardoza, 1991; Carnevale & Rose, 2003; Cuádriz & Pierce, 1994; Daniel, 1997; Enright & Gitomer, 1989; Flores, 1992; Gandara, 1982; Haro et al., 1994; Hernandez, 2000; Hurtado, 1992 & 1994; Hurtado et al., 1992; Justiz, 1995; Landry, 2002-2003; Loo & Rolison, 1986; Morales, 2000; Nettles, 1990; Nora, 1990; Nora and Cabrera,

1996; O'Brien & Zudak, 1998; Pace, 1980; "Revelations and Recommendations," 2001; Rinn, 1995; Smedley et al., 1993; Solberg, 1993; Tinto, 1993; Tornatzky et al., 2002). Based on these four influences, I determined that at least four interviews were needed with each research participant.

Initial Design for Data Collection

The interviews were initially structured to cover one topic per interview session. In-depth interviewing requires trust and rapport between the person doing the research and the person or people being researched, which is why introductory meetings or discussions were scheduled prior to beginning the interviewing process. The meetings or discussions allowed me to talk with each participant about the research project, elicit participation, explain the amount of time required for participation, and encourage a collaborative knowledge-making process.

The in-depth interview was the predominant means to collect data in this study. Each interview session took place in person when possible, via telephone when not possible. Interviews were scheduled weekly so all interviews could be accomplished in 1 month to control for changing perspective on the part of the interview participants. Initially, each interview was to last no more than 1.5 hours to maintain freshness of information and limit the level of frustration associated with lengthy and probing interviews, but several interviews stretched to almost three hours as participants continued to relay their stories. While I began to tire during these long interviews, the research participants seemed to gain clarity and candor. During particularly long interviews, I asked each participant if he or she felt okay, and asked if the participant would like to continue the discussion during a later interview, but all participants expressed a desire to continue the conversation at that time. To maintain internal consistency of data following these

lengthy interviews, I reviewed particular questions in subsequent interviews to assure that the perspective of the participant was maintained.

Because of the possibility of altered viewpoints, I recorded any outside influences and the context of each interview in an interview log to assess any confounding information from previous interview accounts.

In an attempt to address the issues of context of the research, I reviewed a list of 9 questions, taken from Watson and Watson-Franke (1985, for each of the participants. The questions were answered for every interview with each participant. Two of the questions were previously addressed in this chapter. A list of the questions is located in the appendix.

Prior to Data Collection

Prior to beginning data collection, I designed several documents: a list of possible questions for a semi-structured interview separated into the four influences, an interview log at the end of the semi-structured interview, a data collection checklist with the interview log at the end of the checklist, a pre-interview checklist with the interview log at the end of the checklist, and a data analysis checklist. Prior to beginning the data collection process, I performed an Internet search using the search engine Google™ using the names of the four participants. I printed all information that was discovered from this search. After doing the Google™ search, I performed a search on the two local daily newspapers' Websites and printed all information that was found using the participants' names as search terms. Finally, I searched the health science center's Website, using the participants' names as search terms and printed all information retrieved from the search. During the interview sessions, I verified that the information gained during these searches was in fact about the participants and not people who shared their names.

The data collection checklist was formulated to ensure that consistency was followed throughout the data collection process. Prior to each interview, I reviewed the data collection checklist and answered all pertinent questions. An interview log was located at the end of the data collection checklist to ensure that an interview log would be used during each interview.

The pre-interview checklist was designed to ensure that all items needed for the interview were available during the interview. This checklist was formulated after the interview data collection process began, because I forgot a pencil during 1 interview. The questions were based on the practical needs of an interview session so that not only the consistency of data collection could be maintained, but the functionality of the tools used during the interview could be assessed prior to the interview. A contingency for tape recorder failure was also provided for in the pre-interview checklist, based on previous experiences I had as a practicing journalist. Again, an interview log was located at the end of the pre-interview checklist to ensure that an interview log would be used during each interview session.

A data analysis checklist was designed to keep the data collection process on track. Based on the data collection process, the data analysis checklist was altered to take into account the amount of rich data that I gathered during the interviewing process.

An initial list of questions was formulated in the semi-structured interview form. A copy of these questions was sent to each interview participant prior to each interview with a request for feedback or additional questions. Suggestions were made, but no one submitted additional questions. After the first interview, I added questions to the semi-structured interview based on review of the interviews and knowledge of the participants. Questions that were not related to particular participants were deleted, and questions were molded to fit the interview participants' life history. Thus the semi-structured interview was an emergent document based on individual

participants and previous data collection through interviewing. The initial questions in the semi-structured interview form were supplemented by follow-up questions during the interview process. A list of semi-structured interview questions, based on the pre-determined four influences, allowed me to begin data collection in a prescribed way. The follow-up questions allowed me and the participants to follow the pathway that emerged during the data collection process. Participants were also asked to review the transcribed interviews and answer additional questions or make additional comments based on their recollections. All participants answered subsequent questions in the transcripts, and all participants provided additional information based on recollections between the time of the interview and receipt of the transcribed interview. Again, an interview log was located at the end of the semi-structured interview questions to ensure that an interview log would be used during each interview. A copy of the initial semi-structured interview questions is available in the appendix.

The Final Interview Process of Data Collection

A mainstay of qualitative research is the in-depth interview, which provides rich description and depth when studying a person or phenomenon (Gall et al., 2003; Merriam, 1998; Schram, 2004). In-depth interviewing also requires trust and rapport between the person doing the research and the person or people being researched. According to Langness (1965), the interview is the best method to assess motivations, judgments, attitudes, and emotions, all likely parts of each participant's life path that were assessed during this study. Cole and Knowles (2001) see in-depth interviewing as part of life history research. In this study, the interview was the predominant means to collect data. While the interview technique used for this study was predominantly semi-structured, since it allowed participants to discuss their pathways and recall

the events most important to them, I used a set of preliminary questions and guiding topics to direct each interview.

Because I chose the Cole and Knowles (2001) framework for life history research, each participant was asked to help compose the interview questions. Four categories, tentatively termed influences, were covered in the in-depth interviews. I derived these influences from previous studies and research (Adelman, 1999; Allen, 1999; Attiyeh, 1999; Cardoza, 1991; Carnevale & Rose, 2003; Cuádriz & Pierce, 1994; Daniel, 1997; Enright & Gitomer, 1989; Flores, 1992; Gandara, 1982; Haro et al., 1994; Hernandez, 2000; Hurtado, 1992 & 1994; Hurtado et al., 1992; Justiz, 1995; Landry, 2002-2003; Loo & Rolison, 1986; Morales, 2000; Nettles, 1990; Nora, 1990; Nora and Cabrera, 1996; O'Brien & Zudak, 1998; Pace, 1980; "Revelations and Recommendations," 2001; Rinn, 1995; Smedley et al., 1993; Solberg, 1993; Tinto, 1993; Tornatzky et al., 2002) as preliminary influences on the academic success of Latino students. The four influences are 1) family background, 2) cultural background, 3) educational background, and 4) personal perceptions and goals. These four influences were used to set a framework for discussion during each interview.

After each participant agreed to participate in the project, I began setting up interviews. During the first interview session, each participant was given a copy of the informed consent form to sign, and I explained the interview process and purpose of the study. I provided each participant with a copy of the signed informed consent form during the second interview session. All interviews with each participant were conducted face-to-face and audiotape recorded when possible.

During the first interview, each participant was asked to choose the influence that he or she thought had been most influential. After the participant chose what he or she determined was

the most significant influence, the interview session began with that influence. At the end of the first interview session, I asked each participant if he or she had anything to add, and then probed for the influence that was second most influential, third most influential, and finally, least influential, allowing research participants to rate the influences or provide feedback on possible influences that were not included as part of the interview framework. During the final interview, I verified the most significant influence on each research participant. Each participant was also asked to identify any other influences on his or her educational path, and I asked for feedback on the research process itself, including how much preparation time each participant devoted to each interview. The scheduling of interviews was based on times and locations that were most convenient for the participants.

Originally, I had scheduled 4 interviews with each person, one for each identified influence; however, the Nurse and the Family Doctor wanted to consolidate their interviews. The Family Doctor underwent 2 interview sessions, one at the health science center and the other at a local restaurant. Both interview sessions included his wife. The Nurse underwent 3 interview sessions, all in person at her place of business. The Scientist underwent 4 interview sessions, all via telephone. The Internist underwent 4 interview sessions, all via telephone at his home. His wife and child were present during the interview sessions and provided feedback during one session. When asked for feedback about the research process, each participant said that 2 rather than 4 interviews would have been better.

Following each interview session, I transcribed the audiotape. Transcription took from 2 days to 4 days to complete on each of the interviews, depending on the length of the interview. Each transcript was saved onto a USB flash drive and labeled by the interview number and the influence covered during the interview session. Each audiotape was labeled and placed in a

cabinet in my home following transcription. Also following transcription, I reread each interview and included questions about any statements participants made during the interview that were unclear. The questions were included in the transcript in Times New Roman, bold, 16-point green font, while the transcript itself was in Times New Roman, regular, 12-point black font. I reviewed the transcript a third time, with the questions included, to ensure that all necessary questions were added. After a third review, the transcript was sent to the participant via e-mail for review prior to the next interview session. The transcript with questions was also saved on the USB flash drive as a separate file labeled “with my questions.” The practice of participant review of data is consistent with Cole and Knowles’ (2001) concept of life history research, where the researcher and the research participant create knowledge in a joint act of discovery.

The participants answered the questions within the transcript, made factual corrections, and added information to the transcript before returning it via e-mail. I downloaded the returned transcript to the USB flash drive as a separate file labeled “with my questions revised.” I printed a copy of each file and placed it in a binder prior to data analysis. When the final transcript was returned to me, another review of the transcript was made prior to the next interview. Any points that were pertinent to the next topic were highlighted with yellow marker in a hard copy of the transcript.

I revised questions in the semi-structured interview based on the highlighted transcript. I sent each participant the revised semi-structured interview questions prior to the next scheduled interview. I took a hard copy of the transcribed interview to the subsequent interview, referring to highlighted portions at the end of the interview. Participants addressed any questions at that time. I validated the accuracy of the revised transcript by asking each participant if he or she had

made all of the additions and changes necessary. After this validation, the revised copy became the transcript that was analyzed during the data analysis phase.

The interviewing cycle took place during a 1-month period so interview participants would remain fresh and keep a consistent voice when recalling their life histories. This technique of limiting the amount of time to collect data is one way to maintain internal consistency, although other aspects of a person's life can alter perceptions dramatically. Because of the possibility of altered viewpoints, I discussed outside influences on the study and recorded that information in an interview log to assess any confounding information.

Reliability and Credibility of Data

According to Langness (1965), the best test of reliability is the ability to predict what people will do and say in a particular situation. That particular test of reliability will not work in path analysis, since the focus is on the perception of each individual and how he or she defines success. What Langness (1965) did suggest was a 3 point test: 1) observation, 2) checking the account of one participant against the other, and 3) asking the same questions of the same participant repeatedly over a long period of time. While Techniques 1 and 2 were not valid for this study, Technique 3 was employed to check reliability of information received during the in-depth interviews. Questions about the same topic were repeated during the initial interview and in subsequent interviews. I also noted the amount and type of clarification of each transcript, noting whether the information was researcher- or participant initiated. When the original transcript underwent changes, whether as a result of the researcher or the participant, a record of the new transcript was used, noting who instigated the changes that were made and why.

This added step in the data collection process not only gave a nod to Cole and Knowles' (2001) ideas for how pathway research should be accomplished in a collaborative fashion, it increased the reliability of the transcripts because both researcher and participant were able to review and clarify each transcript until the researcher and participant understood all questions related to a particular interview.

While Langness (1965) also suggests the use of other individuals in determining the reliability of data from a participant, this technique was not used, since the focus of the study was on each individual participant's perception of his or her path to academic success, not how others saw that path. Tape recording each interview session also lent reliability to the participant's interviews, since audiotaping provides a more accurate transcript than memory or notes alone.

Another idea that tests the credibility of the researcher's knowledge claims is interpretive validity (Gall et al., 2003). The criteria for interpretive validity are usefulness of the data, contextual completeness of the data, researcher positioning, and reporting style. The usefulness of the data gathered from this study and the conclusions reached are one test of validity. The context of the research, and the context of the researcher to the research and the individuals within the study are also a tests of validity of data. A separate section exists in this paper to address these issues. How the researcher is positioned within the hierarchy being studied adds validity to the study. This is also addressed in a separate section of the study. The accuracy with which the researcher can convey the participant's words and feelings is also a test of validity. Creating a text that puts the reader in the participant's shoes is the goal for accuracy and validity in a life history research study, which is why including actual text from the participants' interview transcripts is important (Gall et al., 2003). Since triangulation sometimes produces

divergence rather than convergence, these tests of validity and reliability were the only means of making sure that the data were accurate, representative, and reliable.

Data Analysis

An initial design for data analysis proved unsuccessful. After several attempts to use the initial coding design outlined below failed, another coding strategy using the mind mapping technique was devised. Description of both data analysis designs follows.

Initial Coding Design

The first coding of each final transcript was done based on the four influences—family background, cultural background, educational background, and personal perceptions and goals. A second round of coding of each transcript was done the next day to review the initial coding and note any differences of opinion from the first round of coding. After the final transcript was coded twice for the four influences, individual incidents or phrases coded within the transcript were separated into the four categories. Each category was then tabulated to determine the number of influences in each interview that fell under the four categories. After the categories were tabulated, each individual category was reanalyzed for similarities in phrasing. All similarities in phrasing were noted and further organized into categories within each influence. Each influence category was coded two times to double check the accuracy of coding and further division into subcategories. Subcategories were then put into a separate matrix and tabulated based on each interview and each interview subject. After all interviews were coded in this way, all data from each participant were combined to form a supermatrix for each individual

participant. Data were tabulated for each participant, using the SPSS program, checking for frequencies of similar information.

Actual Coding and Data Analysis Strategy

In the research proposal, the initial coding design was the proposed method for data analysis. In actuality, I found the initial coding scheme to be cumbersome, producing little in the way of reducing data. I tried coding two separate interviews from the same participant but was unable to reduce data in either attempt. With such a large volume of data provided by the interviews, I instigated a new coding strategy in an attempt to reduce each research transcript to a more manageable amount of data and to produce themes.

Since I attempted to separate influences through separate interviews, some differentiation of themes had already been accomplished during the interview process. However, other influences began to emerge during the interview process, and the research participants discussed topics across themes throughout the interview process as well. The information provided across influences made reduction of data even more difficult within the themes, so I entertained use of software packages to produce relevant themes to cut across all interviews. This idea was quickly dismissed after discussion with several qualitative researchers revealed the complexity inherent in learning such software packages, and the lack of breadth that often resulted in a cursory knowledge of the program.

In a final attempt to make sense of data from the interviews, I separated the interviews into the four influences. In separating the interviews into the four influences, the technique of mind mapping to produce themes and provide organization of the data was used. The process

was accomplished in four hours. In parts of the interview that deviated from the established influence, I tagged the transcript with a Post-It™ note.

Using Microsoft Office®, I coded transcripts using the mind mapping strategy. The final transcripts were printed and labeled based on each participant, the influence covered in the transcript, and the order that the interview occurred. Pages were numbered for reference purposes with S1(1) being the Scientist, Interview 1, Page 1. I used mind mapping to form general thematic ideas within each influence. Concepts were represented by circles emanating from a single, central circle, linked by non-directional lines. Multiple maps were produced from each interview, based on emerging themes. When an idea discussed in the interview did not fit into the influence being discussed, the page was tagged with a Post-It™ note. If an idea could also be included in another influence as well as the one being discussed, the page was also tagged with a Post-It™ note.

All participants' transcripts were coded once using this methodology. Coding for each transcript took between one hour and four hours. Mind maps were stored on a USB flash drive by name of the participant, influence number, and date when the interview was coded using mind mapping, so the Scientist 1.4.5.06 was the Scientist's first interview, with mind mapping done on April 5, 2006. These mind maps were printed in hard copy for review. After coding was completed on all participants using this methodology, a second round of coding was completed to verify original mind mapping. This coding was done in the same order as the original coding. Changes were handwritten on each map. A third round of mind mapping occurred where tagged interview concepts were integrated into the original mind maps. These tagged concepts were also handwritten on the original mind maps, including the location of the idea within the interview transcripts. A fourth round of mind mapping was undertaken whereby concepts within each

influence were reduced to one map. This hand-drawn map was used to create a supermap that included all four influences on a single paper. I drew the final mind map for each influence on a single 11x17 piece of paper and taped three other pieces of paper to the original sheet to form a large poster. The research participant's name was positioned at the axis of the four sheets of paper. For example, the first supermap was labeled the Family Doctor's Success.

Concepts on each map were color coded based on themes that emerged from the interview sessions. Where concepts seemed to overlap, I color coded the nodes on the concept with multiple colors. Table 1 indicates the colors used for each concept.

Table 1

Color Coding of Concepts Related to Latino Student Success

Concept	Color
Educational system	Orange
Personal perceptions and goals	Flesh
Culture	Purple
Family	Red
Language	Blue
Mentors	Gray
Helping	Yellow
Money	Green
Cancer	Brown

Note: Concepts were determined using Padilla's unfolding matrix

After color coding was completed, I counted the number of times each color appeared on the supermap, creating categories which resulted in themes to represent overarching concepts in each participant's life based on the number of times a color appeared on the supermap. These

themes were compared to the influence that each participant said was the reason for his or her academic success. Themes will be discussed in chapters 4, 5, 6, 7, and 8.

Following mind mapping, I reviewed each participant's interview to create a narrative of each participant's pathway to success or life history. These narratives will be discussed in chapters 4, 5, 6, and 7 as part of the data derived from the interview sessions. Since one of the purposes of this study was to determine the pathways to success traversed by these four participants, I used these narratives to answer that question. The narratives and descriptive data from each participant will be compared and contrasted to draw conclusions in relation to current research findings on student success in chapter 8.

Mind Mapping

The technique used for coding purposes in this study, as discussed above, was a type of cognitive mapping known as mind mapping. A mind map is a diagram used to represent words and ideas linked to a central idea. The central idea has other ideas emanating from the center in a radial fashion. The technique is used to structure and classify ideas, organize, and solve complex issues. Mind mapping was popularized by Tony Buzan (1991). Mind mapping has some general foundations, but Buzan (1991) has advocated free interpretation of mind mapping to accommodate different styles. Buzan (1991) advocates use of mind mapping to take notes during speeches, lectures, videos, meetings, and interviews, which was why I chose this technique to make sense of the information contained in the participant interviews. The Buzan technique of mind mapping was what I used in analyzing concepts and creating the themes derived from the participants' interviews.

CHAPTER 4

THE FAMILY DOCTOR

The first research participant, the Family Doctor, representing the medical school at the health science center being studied, was recommended as a possible research participant by several different people. These people described the Family Doctor in general terms, telling me about his life, where he was from, how he had grown up [what they knew of it], and what a nice person he was. I had never met the Family Doctor prior to his participation in this study, so the only knowledge that I had of him was from faculty members, staff, and students.

The Family Doctor was 1 of 7 Latino graduates from the medical school during the 2004-2005 academic year at the health science center being studied. Because the Family Doctor was still in his residency at a local hospital and moonlighting at an emergency clinic, he had little time to devote to the interview process; therefore, he was interviewed twice instead of four times. Both interviews occurred in person. The first interview took place at the health science center after 5 o'clock and covered one influence. The interview lasted 2.5 hours and resulted in a transcript that was 22 pages in length. The Family Doctor's wife joined him during the interview. The second interview occurred at a local restaurant and covered 3 influences. The interview lasted 3 hours and resulted in a transcript that was 38 pages long. Again, the Family Doctor's wife joined him during the interview session.

Each participant determined the order of the interview sessions based on the importance that he or she gave to the influences. The Family Doctor interviews occurred in this order: family background, personal perceptions and goals, educational background, and cultural background.

What follows is a discussion of the Family Doctor's life history, analysis of what he views as the most significant influence on his educational success, and the researcher's analysis of the data gleaned from the Family Doctor's interviews.

The Family Doctor's Path to Success

The Family Doctor was born in Iowa as his parents were traveling up and down the US doing migrant work. They were on their way back from Wisconsin headed to Del Rio, Texas, when the Family Doctor was born. The family stayed about two years in Iowa City, then moved back with family members as they passed through.

The Family Doctor's parents had been working with his father's parents as they did migrant work in farms throughout the western part of the US. The family was originally from Mexico, hailing from the border town of Acuña. The Family Doctor's parents are both Mexican nationals. The oldest of five children, the Family Doctor and his brother and sisters were all born in the US.

In their moves up and down the US, the Family Doctor's immediate family settled in Odessa, Texas, when their pickup truck broke down in the west Texas town. The Family Doctor's grandparents continued their migrant work, while the Family Doctor's family settled into west Texas life. The Family Doctor still traveled with his grandparents intermittently doing migrant work until he was 13.

The Family Doctor's father became a mechanic after the family settled in Odessa. With little formal education [he had dropped out of school in Mexico in 5th grade], the Family Doctor's father had difficulty getting jobs that would adequately support his family. The Family

Doctor's mother did not work outside of the home, and the young family remained poor all of the Family Doctor's life, making about \$29,000 per year for a family of six.

The Family Doctor's father mostly worked for other people, but he tried to open his own mechanic shop at their home. The Family Doctor helped his father during that time, going with him during the night when his father made mobile calls at the local truck stop. The Family Doctor enjoyed the work, but his father stopped making the late night, truck stop calls when his son began college and could no longer assist him.

From an early age, the Family Doctor was told he should either be a doctor or a lawyer. With little formal education, the Family Doctor's parents believed that only doctors or lawyers could make enough money to support their families, so they pushed all of their children into one of these professions. All of the Family Doctor's siblings except his brother are in the process of taking one or both of these routes. One sister is entering medical school; one sister is studying for law school, and the Family Doctor's youngest sister wants to become a physician and a lawyer. His brother graduated from the police academy.

While the Family Doctor dreamed of being a physician when he grew up, he had many other things that he wanted to try before he settled down to his chosen profession. He tried extracurricular activities such as football and band when he was young, but his father forcibly removed the Family Doctor from football, saying he feared that the Family Doctor would be injured. The Family Doctor also quit band because his parents could not afford the instrument that he wanted to play.

His father allowed the Family Doctor to participate in baseball in high school, but that was the only extracurricular activity that the Family Doctor participated in on a continuous basis.

After he moved from his parents' home, the Family Doctor became involved in several contact sports, including boxing, while he was in medical school.

When the Family Doctor began school, his family lived in the part of Odessa that was home to gang members and drug dealers. His father had befriended the gang members in the neighborhood, so the young family went unharmed. The Family Doctor and his siblings were not allowed to play outside of the home or associate with other children, so they avoided the activities that gang members in their neighborhood undertook. The family remained closed, not mixing with neighbors or friends, only other family members.

Living in the poor side of Odessa meant that the Family Doctor attended one of the poorest schools in the city. Prior to elementary school, the Family Doctor did not begin talking until he was 3 years old, and then, he stuttered. Stuttering has continued to be a challenge throughout the Family Doctor's life.

In elementary school, the Family Doctor spoke Spanish in all of his classes. He did not learn English until 5th grade when he began English class.

Although his family moved to a better neighborhood in a safer part of town, the Family Doctor's secondary education did not benefit from the move as he was enrolled in poor schools until his 10th grade year in high school. At that time, his parents removed the Family Doctor from Odessa High School and enrolled him in Permian High School so he could benefit from the added curricular focus. The Family Doctor pushed to be enrolled in honors classes and advanced placement (AP) courses. School counselors continued to push the Family Doctor to take a vocational education route, but several high school teachers also pushed for his educational path to be more college preparatory. By his senior year, the Family Doctor was enrolled in AP

classes, tutoring the football team, and working on a science project at the local university, all thanks to his high school teachers.

When the Family Doctor graduated from high school, he enrolled at the University of Texas-Permian Basin, living at home with his parents and working four jobs while attending college. A photographic memory helped compensate for the Family Doctor's limited study time, since all he needed to do was look over notes a couple of times to have photographic recall of the material. The Family Doctor lived at home with his family, tutored, worked in a lab, drove a truck for UPS, and worked on his parents' farm. During high school, the Family Doctor's parents had moved to a small farm outside of Odessa, fulfilling one of his father's dreams.

The Family Doctor entered college as a pre-medicine major. He took classes year-round, going to the local junior college, Odessa College, during the summer and UT-Permian Basin during the fall and spring semesters. He took the Medical Comprehensive Achievement Test during his junior year and applied to the medical school at the health science center where he was accepted. He completed his undergraduate degree in four years, living at home the entire time, then moved more than 320 miles away for medical school.

The Family Doctor's home life was very closed when he was a child. A quiet child, the Family Doctor had also made few friends throughout his childhood, but after the Family Doctor moved away from home to attend medical school, his life changed. The Family Doctor had never been away from home prior to medical school, so his newfound freedom meant that he participated in more of the social scene in medical school.

In his first year, the Family Doctor became involved with a female medical student, and they became engaged. When the couple broke up, the Family Doctor felt out of place with his

classmates. The ensuing academic troubles that the Family Doctor experienced also led him to repeat his first year of medical school.

Throughout medical school, the Family Doctor pursued some of his outside interests, taking up boxing and other contact sports that he had not been allowed to participate in while he was growing up. The Family Doctor also became involved in clubs on campus, getting to know more students in a social setting. The Family Doctor still felt out of place with his medical school classmates, so he spent much of his time with physician assistant studies students.

During the last part of medical school, the Family Doctor joined an online Christian dating service and met his wife, who moved to Texas from Florida while the Family Doctor finished medical school.

When it came time to choose his residency, the Family Doctor was offered several slots, including a slot in Odessa near his family. Instead, the Family Doctor chose to stay near the medical school, away from his family. When the hospital that he had chosen for his residency closed, the Family Doctor had to move to another hospital in the area, which proved to be a time of some uncertainty for him, since he was without a residency slot for about a month.

While looking for a place to begin his career, the Family Doctor experienced some discriminatory behaviors from a placement service and potential employers when he went on interviews throughout Texas and Florida. Many of the places where he interviewed commented on his accent, and several of the headhunting services tried to persuade him to move to an area where he could, “help his people.” The Family Doctor has also been stopped at several dinners for physicians and asked, “Are you sure you’re a physician?” before he was allowed to enter.

The Family Doctor’s goal is to open his own practice some day, but he recently took an assistant professor position at the health science center following completion of his residency. He

does not plan to stay at the health science center forever, but he thinks it will be a good place to start his career until he builds his client base. He is 30 years old.

The Family Doctor's Perception of the Reasons for His Success

One of the research questions for this project is: What do Latino students perceive to be the reasons for their “success” in higher education at a health science center? To answer that question, I asked the Family Doctor what he thought was the reason for his academic success, as the first question of the first interview session. In the first interview session, the Family Doctor attributed his success in higher education to family background, in particular, his parents. “I think my parents were a big part of pushing me to be successful.” The Family Doctor then explained how his parents’ influence affected him, based on their limited understanding of education and their limited experience with education. “My parents were the major influence in my life, pushing me, pushing me to become a physician. They always wanted someone to be a physician, another one to be a lawyer, you know. All the time, they were always on my back, study, study, study. So they were the ones who had a big push on me.”

His parents’ push for educational success is evident throughout the interview transcripts. While the cells were coded as family, the wording used by the Family Doctor was almost exclusively in reference to his parents collectively or each one of them individually.

While family was a significant concept, it is not the dominant concept according to Table 2. The concept culture had the most frequent occurrence on the supermap, with 76 cells coded as culture. Culture was defined by the Family Doctor as Hispanic culture and family culture; therefore, there is a significant overlap between family and culture with 17 cells containing both family and culture codes. Based on the data, it appears that the Family Doctor believes culture is

an important part of his family background, since culture overlapped with family 30% of the time, but culture alone was a more significant concept than family alone with culture appearing without a mitigating factor 22 times or 29% of the time.

Table 2

Rankings of Color Coded Concepts for the Family Doctor

Concept	#Coded	Rank
Culture	76	1
Personal perceptions and goals	72	2
Family	56	3
Educational system	52	4
Money	40	5
Mentors	19	6

Note: The concepts helping and language are not included in this participant's coding

Personal perceptions and goals had the second most frequent occurrence on the supermap with 72 cells coded as personal perceptions and goals. Personal perceptions and goals had the highest single influence, appearing as the only influence on the supermap 39 times or 54% of the time that a cell was coded personal perceptions and goals.

While the Family Doctor said that family had the greatest influence on his educational path, the concept ranked third, as indicated in Table 2. About 75% of the cells coded as family had some other mitigating influence, so while family was a major influence on the Family Doctor's educational path, the influence of family was tempered by other influences such as culture, which intersected family 17 times. In fact, only 14 cells were coded as family only.

System, defined as the educational system, ranked fourth on the supermap, but many of the cells that were coded as the educational system were also coded as another influence. Only 15 instances of cells coded as educational system had that coding only. Concepts such as money,

parental involvement, mentor involvement, cultural background, and personal beliefs served as mitigating influences for educational system. In some instances, more than one mitigating concept was present on the supermap, indicating that numerous mitigating concepts affected how education positively or negatively impacted the Family Doctor's path.

Money also had an impact on the Family Doctor's path ranking fifth in importance as indicated in Table 2. The concept money appeared 40 times.

Mentors were also prominent in the Family Doctor's supermap, ranked sixth and appearing 19 times, with four of those instances serving as mitigating factors for educational system. The Family Doctor's parents were included in the list of mentors; therefore, some of the mentor cells were also coded as family. So it seems that family, or in this instance, the Family Doctor's parents, did act in a variety of ways throughout the Family Doctor's educational path, both independently and in conjunction with other influences.

A phenomenon present in the Family Doctor's coded supermap was an overlap of influences from cell-to-cell or multiple concepts acting together to influence the Family Doctor's educational path. Of the 315 cells that were color-coded on the supermap, just 111 were coded with only one color, or 35% of the coded cells. This finding seems to corroborate the theories of Pace (1980) and Tinto (1993), who have noted that success in higher education is a complex mix of multiple factors.

The Family Doctor continued to maintain that family was the biggest influence on his academic success throughout the interview sessions. So in his mind, family was the reason for his academic success.

Analysis of the Family Doctor's Interview Sessions and Resultant Themes

What follows is an analysis of the Family Doctor's stated themes as inferred from the interview sessions. The Family Doctor's themes are "My family culture made me focus"; "I always wanted to be a doctor"; "I'm kind of trying to go away from my culture"; and "I wanted a different life."

My Family Culture Made Me Focus

For the Family Doctor, the concepts of family and education are intertwined with culture, which appeared to be the most significant factor on the Family Doctor's educational path. While these concepts are tied together, according to data analysis, particular incidents related by the Family Doctor during his interview sessions seemed to support his contention that family, in particular his parents, was the dominant influence on his educational path. However, it is also clear how the concepts of family, culture, and education are intertwined. "My family culture made me focus more on my education." The Family Doctor made this comment when he was explaining how culture has affected his educational path during the final minutes of the second interview session. He talked about the difference between the traditional Hispanic culture, which he described as more open and focused on parties, celebrations, and enjoying life than his own family culture, which was more closed and strict, with his parents eschewing outside contact for themselves and their children. This internal focus within his immediate family left the Family Doctor to his studies. "Growing up, there was nothing else to do. Stay home and study, watch television. So that's the way I thought, so that's the way my culture affected my education. It was just another way to get focused on my education."

The Family Doctor has a firm belief that how a person ends up in life is a result of how the person started in life. “That’s where everything begins--it’s at the family level,” which is why he credits his family, in particular, his parents with a large part of his academic success. Throughout his childhood, the Family Doctor’s parents were very involved in his life, conveying the idea that education offered opportunities for a different life than they had, more money, more flexibility, more security. “They saw that the people who were educated had many opportunities that people who don’t have an education. You know, if you’ve got that doctor degree, an MD or DO, or a law degree, you won’t have to depend on anybody. You’ll always have a job somewhere, so basically, they were always pushing us toward a law degree or a medical degree, nothing in between.” The Family Doctor believes that his parents’ push for their children to get a medical degree or a law degree was based partly on their lack of education. “They wanted us, they wanted me to be something up high, or like, they, people who, like my parents, who don’t have education, they see physicians as something higher, lawyers as something above.” But no matter what the reason, the push for education as a key to success was strong in the Family Doctor’s family. This push is also evident in the overlap between the concept family and other mitigating forces in the supermap coding, especially with an overlap between family and culture. It seems that the Family Doctor’s family created a culture all its own as evidenced by his own words and 17 cells containing both family and culture codes. Based on the data, it appears that the Family Doctor believes culture is an important part of his family background, and part of his family’s culture was his parents’ push toward education as the solution.

The Family Doctor’s parents, particularly his father, were so insistent upon the importance of education that they limited the Family Doctor’s outside activities and pushed him to focus on education, often to the exclusion of other activities. “They would be after me to do

my homework and push me all the time. Just, I would be in sports, you know? They would take me out, just so I could study.” The Family Doctor recounted a particular incident involving football. When he was in elementary school, his parents allowed him to play football, but when he went to junior high school, the Family Doctor continued to play football without his father’s permission. When the Family Doctor didn’t come home from school right away one day, his father knew that the Family Doctor was out playing football. So during the first football game of the season, his father walked onto the field and picked the Family Doctor up by his shoulder pads, put him over his shoulder, and carried him off the field. “He said, ‘You’ve got to think of injuries. What if you get your neck broken?’ At the time, I didn’t see that. I just wanted to play, because it was fun. I thought I would be a football star. That was my goal. I told my dad, ‘I can do it.’ He wanted me to be in education, and I said, ‘I can do it. I can be a football player if I want to.’ He said, ‘No.’” The Family Doctor said that in retrospect, he understood what his father was saying, but at the time, he just wanted to play.

After the Family Doctor left home for medical school, he took up boxing and eventually other contact sports, but while he lived at home with his parents, his father limited his athletic and other extracurricular activities. “I think the reason my parents were so strict was because of the education. You have to do education. Once you do your education, then you can do anything you want. That’s what they always say.”

For many children, the push by parents toward one activity would force rebellion, but that was not the case for the Family Doctor. Because his family followed the traditional Mexican model, as evidenced by the intertwined coding of family and culture on the supermap, the Family Doctor listened to his father and obeyed. “The Mexican culture, one thing that is, the men being the head of the household. What he says goes. That’s the way, that’s in the Mexican culture,

what I see in the Mexican culture, and what I see in my family.” Both of the Family Doctor’s parents are Mexican nationals, so the traditional Mexican culture is still strong in the Family Doctor’s immediate family; however, the Family Doctor’s family culture did differ from what he considered the traditional Hispanic culture that he saw in his friends, since his parents kept the family separate from its surroundings and other families. “My parents weren’t that outgoing like other families were, their cultures were. Overall, the whole culture was the same, the Hispanic man was the leader of the house, you know. The lady stays in the kitchen, fixing dinner and stuff, all of that was the same. Just the structure of they were laid back. Every weekend, partying. Every Saturday, going to the dance. Every Sunday, go to church, and then drink all day, and Monday morning, get up and going to work. I would see the kids, and the push for them wasn’t there.” Because the push from their parents to better themselves and seek an education was not there for his friends, most of them stayed in the neighborhood. “That doesn’t mean that the others didn’t have kids that haven’t been successful. The main point, most of them have a living, but they didn’t pursue higher education. I think because of what they saw, they wanted to keep the same culture, the same as their parents did, because that’s what they see. They didn’t see beyond. They just wanted to be comfortable.” His parents’ ability to see beyond their circumstances and dream of a better life for themselves and their children instilled in the Family Doctor a desire to be more. That desire, along with a constant push toward education from his parents, helped steer the Family Doctor through higher education despite the barriers associated with poverty, social status, discrimination, and language.

I Always Wanted to Be a Doctor

The Family Doctor shared his parents’ dream. He also wanted to become a doctor. The

three of them differed on how that would happen. This difference is clear in the Family Doctor's partial quote that serves as the theme for this section. "I remember I always wanted to be a doctor growing up, but there were many things that I wanted to do. I wanted to be a fireman; I wanted to be a police; I wanted to be an astronaut, or I wanted to be an engineer. Or for the longest time, I wanted to join the Armed Services and be a Marine or a Navy Seal. But I knew that I wanted, what my interests had become, but I wanted to do stuff in between." So the Family Doctor's idea was to try a variety of things and then settle on medicine, so that eventually, his parents' goal would become his goal—to be a physician.

From his childhood, the Family Doctor dreamed of being a doctor when he grew up, but he had other dreams as a child as well. When the Family Doctor became a football star in junior high, his goal and his dream changed. He wanted to be a professional football player. When his father took him out of football so that the Family Doctor would focus on education, his focus moved more to education for some time, carrying him through high school and into college and the dream of being a doctor. But eventually, his interests turned to something new—boxing. The Family Doctor learned how to box in college, and he began to feed his ultimate dream of being a boxer even while he was in college, preparing for medical school, and eventually in medical school, training in the same gym as Paulie Ayala, a professional boxer. "But I don't want to give up medical school, what I've worked so hard with to do, and yeah, maybe I can make it, but maybe I won't. That's why I left that over there and decided to keep on going through school." This strong determination to accomplish his goals is evident in the supermap coding of personal perceptions and goals. While personal perceptions and goals had the second most frequent occurrence on the supermap behind culture with 72 cells, it had the highest single influence, appearing as the only influence on the supermap 39 times or 54% of the time that a cell was

coded personal perceptions and goals. So while the Family Doctor valued his family background and counted it as the most influential influence in his academic success, his own personal perceptions and goals also played a significant role in his higher education success, revealing a strong internal locus of control.

While the Family Doctor wanted his path to becoming a doctor filled with a few more detours, his parents made sure that he maintained his focus, realizing the dream that they had for their oldest son. “I knew what I wanted. I knew the end result would be me a physician, but I wanted to try other things as a young guy, or kid growing up, I wanted to do different things. I was not able to do as many things as I would want to do in life.” But the Family Doctor’s move away from his parents’ home allowed him to experience more of life. “I believe that I began to have fun in medical school, because I was by myself, and I could make my own decisions at this time.” The Family Doctor’s ability to make his own decisions while accomplishing his goals coincided with his move away from the influence of his parents during medical school. It seems that the Family Doctor’s liberation allowed him to distance himself from his parents’ influence or family background, which could be a reason why the influence personal perceptions and goals seems to have a more singular influence on his educational path than other concepts.

I’m Kind of Trying to Go Away from My Culture

The move from his family’s household to medical school marked a change for the Family Doctor. For the first time in his life, he was physically away from the influence of his family and its culture. For the first time in his life, he could do what he wanted to do without interference. “Coming to med school, kind of changed everything.” The Family Doctor began to socialize with classmates and participate in extracurricular activities. Although he had his own hopes,

dreams, and ideas as a child, the Family Doctor was finally able to express them and act upon them without being quashed by his parents. “You know, I have my own ideas and my own way of thinking, not their way of thinking. I know they still try to make me think like they think, well my dad thinks,” but finally being away from his family allowed the Family Doctor to nurture his own way of thinking, which led to the idea expressed as the theme of this section, an acknowledgement of steps toward integration into a different culture. “I’m kind of trying to go away from my culture. I’m still Hispanic, but when me and my wife have kids, we’re going to raise them a better way.” This statement is a nod to the Family Doctor’s belief that his family culture is different than Hispanic culture and different from his life today with his wife.

The concept culture had the most frequent occurrence on the mind map with 76 cells coded as culture. It is clear that culture has had a significant influence on the Family Doctor. It is also clear that the Family Doctor associates his family with culture, since 17 cells are color-coded as culture and family, which could explain why the Family Doctor views his culture as changed since he has moved away from his family. The Family Doctor’s willingness to put physical distance between himself and his family attests to the theme for this section: That he is moving away from his culture.

While traditional Mexican culture has the man act as the authoritarian leader of the family, the Family Doctor and his wife engage in a marriage unlike his parents’ marriage, which is in the traditional Mexican model. “I have a say, and she has a say. So it’s kind of equal, 50/50, which is the way I want it—somebody to stand up to me and challenge me, give me a fight, not be afraid to say her opinion. That’s what I got.”

A desire to move away from his traditional, closed family culture and into his own life led the Family Doctor to further socialization in college and medical school. Throughout his

early elementary and junior high school years, the Family Doctor felt outside of the social structure. His parents were loners, keeping the family away from all outsiders except other family members. The Family Doctor's inability to communicate effectively because of his stuttering combined with his parents' insistence on conformity to their rules left him as a self-described loner. "Junior high, I felt like I didn't fit in, because I was by myself, a loner. High school, the same way. I didn't feel like part of the group, because it was always me and the other guy. We just kind of hung out by ourselves." College and medical school changed that status, providing the Family Doctor a greater ability to socialize and fit in within extracurricular organizations and with his classmates. "In college was where I really felt like I belonged. I guess medical school and college where I started finding my split, where I felt comfortable." The Family Doctor even became involved in student organizations at his undergraduate institution and the health science center.

While his undergraduate institution, the University of Texas-Permian Basin, did not have Latino cultural organizations at the time he was a student there, a group of Latino students started a cultural organization for students at the health science center that he attended during medical school. Since the Family Doctor was friends with the organizers, he also became involved with the organization. He became involved with another organization, which was predominately Caucasian in its membership. The Family Doctor's level of comfort and integration was more evident in the mainly Latino organization. "Well the SALSA [Society for the Advancement of Latino Scholars in America] group, I felt more like myself, with my culture, with the Hispanic people, with the Latinos. I was talking more. In CMA [Christian Medical Association], I was more reserved. I felt comfortable there, but I was more reserved, didn't do as

much talking, wasn't as outgoing or as active as I was in the SALSA group, because there wasn't a lot of Latin or Hispanic people in the Christian association. I was the only Hispanic in there."

Despite his earlier assertion that he is moving away from his culture, the Family Doctor continues to identify with the Hispanic or Latino culture and sees it as an important and integral part of his life today. "You shouldn't be embarrassed of where you come from. That's what this degree gave me. I'm Hispanic, that's my culture. I'm a physician, and I represent my culture wherever I go. Be proud of it where you go." It seems the culture the Family Doctor wants to move away from may be his family culture, not the Hispanic or Latino culture.

I Wanted a Different Life

Motivation can be the difference between success and failure. For the Family Doctor, motivation came in many forms, but from his earliest remembrance, his parents were an external motivator, pushing him to focus on education as the key to a better life. As the Family Doctor grew older, he saw the poverty and disadvantages that his family endured because of his parents' lack of education and lack of opportunities. Eventually, these external factors provided an internal motivation for the Family Doctor to seek a better life. This is also evidenced in coding from the supermap, where personal perceptions and goals, which can be seen as motivation, accounted for the second most frequent occurrence on the supermap with 72 cells coded as personal perceptions and goals. This is also evident in the theme for this section. "Anything in my parents' lives—how they grew, how they worked and then maybe just that I didn't want to see myself doing. I wanted a different life."

The Family Doctor saw the toll of poverty and limited education reflected throughout his community, and he realized that higher education was the key to financial independence. "When

I was going to school, I saw, you know, yeah, I could work and make money and lead a good life and everything, but I didn't like the fact that I had to depend on somebody else to ask for vacation, or to ask for a raise, or ask, always have to think, you know, am I gonna have a job tomorrow? That's what drove me to have higher education." But these were the ideas that had been instilled in the Family Doctor by his parents from an early age through the continual push to focus on higher education, in particular, being a doctor or a lawyer. "They try to push me to be a physician, and so many times, you know, they would push me all the time. They would be after me to do my homework and push me all the time." So many of the Family Doctor's internalized motivations seemed to have an external origin, particularly from his parents, which may be why the doctor credits his parents with his educational success.

The Family Doctor himself recognized this external motivation when he discussed people who had been instrumental in his success. The first people he named were his parents, but his parents were still unable to help the Family Doctor negotiate much of the system of education that wanted to place him in vocational and technology courses. Instead, a teacher in high school allowed the Family Doctor to work on a science project that was taking place at UTPB. This teacher also pushed for the Family Doctor's right to take an Advanced Placement course. A professor in college helped the Family Doctor get more comfortable with the English language in a Literary Criticism course, and a professor in medical school also helped him with his English language skills. The medical school allowed the Family Doctor to repeat a year of classes, and other faculty members, staff, and students worked to help the Family Doctor become more socialized through study groups and extracurricular organizations. These influences are best reflected in the concept, educational system, which appeared on the supermap 52 times. But many of the cells that were coded as educational system were also coded as another concept.

Only 15 instances of cells coded as educational system had that coding only. So while the education system seemed to be an important concept in analysis of the data, its potential negative influences seemed to be mitigated by other concepts, such as money, parental involvement, mentor involvement, cultural background, and personal beliefs. This is evident in the Family Doctor's recognition of these external influences that mitigated the concept of educational system and its importance on his academic success.

The Family Doctor realized that these external influences were important to his success and to the success of other students who come from disadvantaged backgrounds. "I guess, you know, it's good for I guess minorities, being a minority meaning uh, anybody, any kid, being Caucasian coming from a poor family, being Hispanic from poor family, black coming from a poor family, it doesn't matter where they come from as long as somebody is there to feed that seed and make them feel like important. I can do this. It opens up your mind. Maybe I can do something else. It builds you up and pushes you to have a drive. So I guess you just need somebody to kind of open the door for you and feed that seed. Let it sprout up there, so I guess that's what the science project did for me."

For the Family Doctor, those people who provided the push helped quell his doubts, but despite the doubts, the Family Doctor's confidence and internal drive pushed him through college. "I always had in mind that I wanted to go to college, either working full-time and going to school part-time or working part-time and going to school full-time. I saw myself in college all of the time." According to Hernandez (2000), this is an important aspect of motivation—the ability to see oneself where you want to be. The Family Doctor has that ability and the determination to follow through. "I know that if I put something in words, I would accomplish it. In my mind in my gut feeling, growing up, I knew that I was going to become a doctor. I wasn't

freaking out about it, or struggling about it. I knew that I was going to become one, and I just had that inner sense. I see myself out there, so it just flowed. It just flowed pretty easy.” This aspect of the Family Doctor’s motivation is also evident throughout the interviews and the circuitous route that he would have chosen to become a doctor. Instead, he was pushed to a more focused route, determined by his parents and their overwhelming influence. Such a laissez-faire attitude is how the Family Doctor sees his drive toward goal attainment. “When I set myself to it, it will happen. It’s just a, to get it done now, now, now...I don’t have that.”

One thing the Family Doctor is adamant about is the kind of life he would like to provide for his own children. While he wants a different life for himself, he also wants a different life for his children. The Family Doctor and his siblings were pressured by their parents to become doctors or lawyers. According to the Family Doctor’s recollections of his childhood, there was nothing in between these two professions as far as his parents were concerned. Consequently, the Family Doctor became a doctor, and three of his four siblings have committed to either becoming doctors or lawyers. The Family Doctor is adamant that his own children will not have that pressure. “That would be my whole purpose in life, for my future kids for them to have a better life. You know, they can decide. They don’t have to be doctors. That’s not everything in the world is a doctor or lawyer. They can do other things. You can do a lot of things and be successful. There’s not just no other road, because I know growing up, because of my father and mother, because they’re not educated, you know, to them, being a doctor and a lawyer was all I could be. There are all sorts of opportunities that I can see now.”

CHAPTER 5

THE NURSE

The second research participant, representing the School of Public Health at the health science center, was recommended by several people. While these people recommended the Nurse, I already knew her. The semester before her graduation from the health science center, the School of Public Health had hosted an anniversary celebration. I had been on the committee planning the celebration, and her company had purchased a table at the event. I saw her there but did not realize she owned the company that bought the table. When I was contacted by her major professor, I connected the information.

The Nurse had done her dissertation on living wills. She defended her dissertation the day Terri Schiavo died, so the Nurse's major professor contacted me to see if media outlets would be interested in talking with the Nurse about her findings. I initially contacted the Nurse and spoke with her about the story. For a few days, we talked several times, scheduling times to meet with media for interviews and photo opportunities. After that week of concentrated activity, I did not speak with the Nurse again until I asked her to participate in this study.

The Nurse was 1 of 3 Latino graduates from the School of Public Health during the 2004-2005 academic year at the health science center being studied. Because the Nurse is the founder and chief executive officer of a successful hospice care business, employing 900 people in several states, getting time in her jet-setting schedule was often difficult; therefore, it took about 2 months to complete the interview process with her. At her request, the third interview became the final interview, covering two influences instead of one. All 3 interviews occurred in person, in her private office at her business headquarters. We were interrupted several times during each interview by telephone calls and pages for her over the loudspeaker system at her headquarters.

The first interview lasted 2 hours and resulted in a transcript 16 pages long. The second interview lasted 1 hour and resulted in a transcript 10 pages long. The third interview lasted 2 hours and resulted in a transcript 24 pages long.

Each participant determined the order of the interview sessions based on the importance that he or she gave to the influences. The Nurse's interviews occurred in this order: educational background, personal perceptions and goals, family background, and cultural background.

What follows is a discussion of the Nurse's life history, analysis of what she views as the most significant influence on her educational success, and my analysis of the data gleaned from the Nurse's interviews.

The Nurse's Path to Success

The Nurse was born in Bayonion, Puerto Rico, to a poor, Catholic family. Although the Nurse and her family were poor, they were better off than most families in their neighborhood, because her father was always able to provide for the family. The Nurse credits much of her work ethic and business sense to her father, since he was a hard worker who never missed a day of work even though he was an alcoholic.

Every day, the Nurse and her four brothers and one sister would go outside and play until their father came home. The Nurse remembers each of her siblings taking turns serving as a lookout for her father as he drove up the hill to their house from work. Their mother was a housewife, so she would be home when the children arrived from school and would let them go outside to play. When the children saw their father coming home, they would run inside, since it was his rule that the family should stay in the house.

The Nurse had a normal childhood, going to public school in Puerto Rico from 1st to 12th grade. She would go to school, come home, do her homework, play, and go to school the next day. But two things separated the Nurse's childhood from a normal childhood in the US – an alcoholic father and the Puerto Rican educational system.

The Nurse's alcoholic father brought chaos and uncertainty into the home. While her father was not physically abusive to the Nurse and her brothers and sister, he was physically abusive to their mother, hitting her and even chasing her through the house and out into the yard one time with a butcher knife. When the Nurse began to understand what was going on in her house, at about age 12 or 13, she fled to her grandparents' house every weekend, searching for the peace and family atmosphere that was missing in her parents' home.

The Puerto Rican public education system differed from the US at the time. There were no physical education classes, and courses were taught in Spanish. Since Puerto Rican schools got their books from the US, the books were in English, but everything else in the courses, including the homework, was in Spanish.

The Nurse was the first female grandchild on her mother's side of the family. She became her grandmother's favorite, taking a trip with her grandparents to Europe for her *quinceñera*, and she fled to her grandparents' house when things became too chaotic in her own home.

When the Nurse started high school, the professors in her classes began talking with her about going to college. The Nurse had not really focused on her studies or thought about the possibility of going to college. When she was 15 years old, the Nurse started reading about nursing schools based on the influence of the nurses in her neighborhood. She discovered a program that would pay for her room, board, tuition, and give her a \$10 per month stipend. The Nurse applied and was accepted.

During her studies, the Nurse and her boyfriend rocked between wanting to get married and splitting up. Her mother and grandmother convinced the Nurse to finish her degree before she got married, and just a few months after receiving her registered nurse certification in 1973, the Nurse married her first husband. Soon after, the couple had their first child and then a second. The couple had four children in the next five years.

When the Nurse applied for a job at the Veterans Administration in Puerto Rico, the director of nurses said that she would be happy to hire the Nurse, except she did not have a bachelor of science degree in nursing (BSN). Although her husband did not want her to return to college in 1977, the Nurse packed up her kids every day for class and took them to her mother's while she studied to get a BSN. She even gave birth to her fourth child during her final semester in college. She graduated in 1981.

A working mother and student, the Nurse overcame many challenges during her college education, some of which came from her first husband. While the Nurse wanted more from life, her first husband was comfortable with their life in Puerto Rico. His drinking and drug habits also provided a source of concern as well as a barrier to the Nurse's further education.

During her studies to receive a BSN, the Nurse and her first husband had two other children, including a son who needed extensive surgery. In 1991, she came to the Dallas Metroplex seeking the healthcare that her son needed. Her mother arrived about six months later to help her take care of the other children. Her husband, who had been in and out of her life prior to leaving Puerto Rico, soon followed.

While the Nurse could read English, she could not speak the language, but she was able to get a job as a nurse in a local hospital. Her son received the operation that he needed, and her other family members soon followed from Puerto Rico, including her grandparents.

Personal troubles continued to plague the Nurse as her mother became ill and died at age 56. Her estranged husband was also murdered in front of a local convenience store, but still the Nurse plodded on, rearing her four children as a single mother and working multiple nursing jobs to make ends meet.

As the Nurse became better integrated into the medical community in the Dallas Metroplex, she began consulting with doctors on wound care. Eventually, she took a certification course to specialize in wound care and worked throughout the Dallas Metroplex consulting.

While she was busy working, the Nurse's mother needed nursing care in the final stages of her life. The Nurse was amazed at the lack of cultural sensitivity that existed in the care provided by the hospice nursing staff. Suddenly the Nurse saw a need, and she began working to fill it. At first, she offered her services for free, providing culturally-sensitive counseling in Spanish to patients who were very ill or dying. Then a friend told her that she could make money providing the service. A business was born.

For a year, the Nurse worked at a regular nursing job, did consulting on the side, and worked on her business, which now had one employee. After a year, the Nurse was too exhausted to go to her regular nursing job for one whole week, and she was fired. She became the second full-time employee of her burgeoning business and has added to her staff ever since.

The Nurse founded her business in 1995 and sought a master's degree in public health in 1997. She graduated in 1999, and in 2002, she began work on a doctorate degree in public health. She graduated in 2005.

After arriving in the US, the Nurse met and married her second husband, put all of her children through college, and became a grandmother nine times over. While completing her

doctorate, the Nurse even looked after one of her grandchildren, a 1 year old grandson, when her daughter and son-in-law were deployed to Kuwait and Iraq.

Today, the Nurse's start-up company employs all of her children, her sister, and her husband. She has a total of 900 employees in Puerto Rico, Texas, New Mexico, Virginia, New Jersey, North Carolina, and Florida with plans to expand further.

She still struggles with the English language when speaking, but the Nurse has joined Toastmasters to help her overcome her fear of speaking and improve her English-language skills.

The second oldest of six children, the Nurse, her brothers, and sister were close when they were growing up, and when the Nurse moved to the US, her siblings came as well, so they have continued to be close. The Nurse's entire family followed her to the US, and she has since nursed her mother, her father, and her grandmother in their final days.

Although the Nurse has taken a more laid back approach to her business since a cancer scare this past year had her undergo surgery, she continues to seek challenges to further her knowledge and influence. One of her latest plans is to go back to college to earn a certification to teach nursing at the university level. Throughout her master's and doctoral degrees, the Nurse has convinced one of her workers to also seek advanced degrees, and the two of them have graduated with their doctoral degrees in public health at the same time.

Despite the struggles that her first marriage engendered, the Nurse chose to marry again. Her second husband has been supportive in her quest for an advanced degree and has helped keep family and business troubles at bay while she studied. They have been married 19 years.

When the Nurse received her DrPH degree, she was 53.

The Nurse's Perception of the Reasons for Her Success

One of the research questions for this project is: What do Latino students perceive to be the reasons for their “success” in higher education at a health science center? To answer that question, I asked the Nurse what she thought was the reason for her academic success as the first question of the first interview session. In the first interview session, the Nurse attributed her success in higher education to educational background and her belief in the importance of education. She described how no one was pushing her to go to college or even finish high school until a professor at her school asked what she wanted to do. “I really didn’t know, but I remember when I was 15 years old, I always said I would like to be a nurse, and then from that age on, I started looking and reading about nursing.” Later in the interview, the Nurse acknowledged the help that professors in high school and college provided, but credited herself as the most influential person in her life to helping her achieve academic success. “I don’t think nobody helped me. Just myself, and my, and I guess, my determination to do something and finish. It doesn’t matter what happened and the barriers or nothing. It’s just if I’m going to start something, I’m gonna finish.”

Table 3

Rankings of Color Coded Concepts for the Nurse

Concept	#Coded	Rank
Personal perceptions and goals	77	1
Culture	74	2
Family	48	3
Educational system	45	4
Mentors	31	5
Money	24	6
Language	13	7
Helping	10	8

The Nurse's belief in herself and her abilities is evident throughout the interview transcripts. Personal perceptions and goals ranked first on the supermap that combines all interview sessions, according to Table 3. While personal perceptions and goals as a concept did dominate the supermap, what seems more significant is the number of times that the concept appeared without any other mitigating influences, 53 times or 69% of the time. The dominance of this concept is clear when looking at the colors on the supermap, revealing the Nurse's very strong internal locus of control as evidenced by intrinsic motivation and belief.

Also clear from a visual inspection of the map is the significant influence that culture has had on the Nurse's life history. The concept culture ranked second as seen in Table 3, appearing 74 times, just behind personal perceptions and goals. However, culture appeared as a separately coded influence only 22 times on the supermap or 30% of the time. While culture was clearly a significant influence on the Nurse's educational path, the concept was tempered by other influences such as family, which intersected culture 31 times. During her interview on cultural background, the Nurse paired the concepts of family and culture in explaining what culture means to her, which may explain the overlap between the concepts culture and family.

There is an almost 30 point difference between the next most frequently coded concept family, but many of the cells that were coded as family were also coded with another concept or influence. Just seven instances of cells coded as family had that coding only or 15% of the time.

Educational system also seemed to have an effect on the Nurse's educational path as indicated in Table 3. Educational system seemed to have a significant effect on the Nurse, appearing 20 times as a separate influence or 44% of the time.

Mentors were also prominent in the Nurse's supermap, appearing 31 times. The concept of mentors seemed to have several factors that interacted with it throughout the Nurse's

educational path. Family, educational system, personal perceptions and goals, money, and helping were also coded along with mentors. The concept of helping seemed to be most associated with mentors, appearing just 10 times on the supermap and ranked eighth on Table 3, with only one of those instances excluding mentors in the coding.

Money also had an impact on the Nurse's path, according to coding on the supermap. The concept money appeared 24 times and ranked sixth, according to Table 3. The concept was coded alone in only five instances or 21% of the time, and four of those were found in the interview session on educational background. During the interview process, the Nurse discussed the importance of her first degree program, which she completed by winning a scholarship and stipend. The lack of finances that her parents could provide for college seemed to be an important factor in the Nurse's decision to participate in the scholarship program. The concept of money was mitigated by family, system, mentors, personal perceptions and goals, helping, and culture.

Language had an impact on the Nurse's educational path as well, appearing 13 times on the supermap and ranking seventh as seen in Table 3. The concept appeared in two interview sessions on the supermap, a phenomenon peculiar to the Nurse. The concept appeared seven times during the cultural background interview and six times during the educational background interview, perhaps indicating the Nurse's perception of how culture or at least one aspect of culture as she defined it, affected her educational path.

A phenomenon particular to the Nurse is a focus on personal perceptions and goals. This finding seems to indicate a strong determination on the Nurse's part to complete her education despite challenges that occurred. The finding also corroborates the theories of Polinsky (2003), Hernandez (2000), Allen (1999), and Harrington and Boardman (1997) who have noted that

success in higher education is associated with incredible amounts of personal motivation and personal determination to succeed.

While the Nurse maintained that educational background was the reason for her success, upon further clarification, she believed that her own personal determination and will to succeed in higher education were the deciding factors in her academic success.

Analysis of the Nurse's Interview Sessions and Resultant Themes

What follows is an analysis of the Nurse's stated themes as inferred from the interview sessions. The Nurse's themes are "The main thing is the education"; "Whatever you want in life, it can be done"; "The only challenge is my language barrier"; and "It's very important, because emotionally, you need all this support."

The Main Thing is the Education

According to the Nurse, the concept of education, or the value she placed on education, was the main influence that informed her educational path. Analysis of data from the supermap did not show this concept to be the dominate one using the mind mapping technique. When the nurse identified education as the main influence on her higher education success, she seemed to have a different idea or definition of what that influence means than would traditionally be thought of when defining education as an influence on higher education success. Traditionally, educational background or classes taken, schools attended, and grades earned would be what most people would consider when referring to the term education. This is not the definition that the Nurse seemed to use. Anecdotal evidence throughout the three interviews provided a better

understanding of what the Nurse meant when she said education was the most important factor to her educational success.

In describing certain events that have helped her get where she is today, the Nurse provided the theme for this section. “Well, the main thing is the education. The education. That I went to school, and that I have my DrPH, and it’s helping me every day.” To further understand this idea, the concept of education must be explained from the perspective of the Nurse’s mother.

Although the Nurse maintained during her first interview on education that there was no pressure on her to complete high school, she later acknowledged, in her interview on family background, that she was encouraged to pursue education by her mother and her mother’s belief in the importance of education. “She [her mother] did believe in education, and she always want me to pursue my education and get a degree. She said the person who has a degree never has to suffer, and it was her deal to go and do education...She was always telling me go and finish your degree.” While the Nurse’s mother firmly believed in the importance of education, she had little education herself. The Nurse’s mother and father had completed 9th grade and then dropped out of school. In describing her parents, the Nurse said they were simple folk, and while her mother encouraged the Nurse to pursue her degree, she provided no expertise on how to accomplish that. “She didn’t give me any info on what to do, or counsel or what, because she didn’t know better.”

The strong message that her mother instilled in the Nurse seemed to affect the Nurse’s own beliefs on the importance of education. “The only thing I can tell you is just when you’re educated, and then you didn’t have no limitations. And education is, I don’t know why, but since I went to college—education, education, education. This is something I can tell my kids. This is something that nobody can take away from you. You can have a beautiful house. Somebody can take it away from you. Even the hurricane can come and take your house away from you. But

when you have the knowledge that you have the education and your title. I mean, nobody can take that away from you unless you die. So it's very important." The Nurse reiterated the idea that education cannot be taken away from you in the third interview about family background, so these ideas seem to support the Nurse's assertion and belief that education is the most important influence in her life.

Throughout her academic career, the Nurse has sought more higher education for a variety of reasons that seem to support her belief in the importance of education. When the Nurse applied for a job at the Veterans Administration in Puerto Rico, the director of nurses told her that she could not hire the Nurse because she did not have a bachelor of science degree in nursing, so the Nurse went back to college. "She said it was important, so I go." After the Nurse had already begun her own successful company, she saw the need to further her education as well. "I said, 'Wait a minute, I need to do something. I'm missing my piece here in this puzzle.'" Again, the Nurse went back to college to work on her master's degree in public health. After she finished her master's degree, she saw the benefit of having a doctorate, so the Nurse continued her education.

During each of these forays back into higher education, the Nurse came back to school for a variety of reasons. She discussed some of these reasons for seeking higher education. "For me, because I want to increase my knowledge. Just me. But also, the second one is because I want to, like I said previously, to earn respect from employees, the community, and other professionals." Throughout the interview on personal perceptions and goals and during her interview on education, the Nurse reiterated the importance of these two reasons for continuing through higher education—increasing knowledge and earning respect. As part of that respect from other professionals and the community, the Nurse has seen an improvement in her business

since she received her DrPH. “Because it’s not the same that you said, ‘Okay, Ms. Santiago is calling.’ Instead, ‘Dr. Santiago is calling.’ People, they do pay more attention to that, and they listen to you better, and they respond in a better way.”

Based on the interviews, it is also clear that the goal of increasing knowledge has not dissipated since the Nurse has received her doctorate. Since graduating with her doctorate, the Nurse has worked on a one-year fellowship with the University of North Carolina. She has also begun a Toastmasters course to improve her public speaking skills, particularly in English, and she has started a certification program through the University of Texas at Arlington, so she can eventually teach nursing on an adjunct basis at the university level. “It’s always something. I just continue with something else to keep increasing my knowledge.”

The Nurse’s firm belief regarding the importance of education is something that she espouses to anyone who will listen. Her children were the first targets of her mantra. “I’m educated, so education is very important to me. So I was passing that on to my kids.” But the belief that education is important is something she continues to share beyond her family. Because the Nurse has a passion for helping others, and she believes that education removes all limitations, she preaches the importance of education. “My passion is to help others, especially in health, like our clients, and in education. Help other individuals to go and get their education. That’s my main thing.” The Nurse has even donated money to a local organization to provide scholarships for Latinos who want to attend college to pursue health-related careers. So the Nurse’s belief in the importance of education to her success has come full circle—she heard the message from her own mother, relayed it to her children, relays it to others, even donating money to fund scholarships, and she continues to follow it seeking more opportunities to increase her knowledge when they arise.

Whatever You Want in Life, It Can Be Done

While the Nurse saw education as the most important factor in her educational path, the coding from the supermap suggests that the Nurse's motivation as seen in the coding of personal perceptions and goals is the dominate factor in her educational success. The previous section has also shown that it was the Nurse's actual perception of education and its importance that made the concept significant to her success. Based on the interviews, the Nurse's education itself did not seem to be the deciding factor, so the two themes of "The main thing is the education" and "Whatever you want in life, it can be done" actually overlap, since they both relay thoughts, feelings, and beliefs that motivated the Nurse during her higher education career.

In coding the Nurse's interviews, personal perceptions and goals appeared on the supermap 77 times, which was only slightly more than culture, which appeared 74 times, but the concept seemed to have a stronger influence than culture, appearing 53 times or 69% of the time as the sole influence compared to 22 times or 30% of the time for culture. The theme for this section "Whatever you want in life, it can be done" reflects the Nurse's personal philosophy and determination to be successful; however, this idea was presented in the interview on educational background, providing further evidence of how the two influences are linked. In the Nurse's interview about her personal perceptions and goals, she clearly confirms the linkage between personal perceptions and goals and education. In response to the question: 'Is your life fulfilled yet?' she replies: "Yes. Why? Because I have what I always wanted, my higher education." For the Nurse, that process took 35 years. She began her nursing education in Puerto Rico in 1970 and completed her doctorate in Texas in 2005. Determination and an internal motivation seemed to propel the Nurse along the pathway toward a DrPH. "It is an internal thing, that I have to do better every day. That's me. I have that drive."

Along the pathway, the Nurse did face barriers, but they seemed to matter little in her quest for education. “It doesn’t matter what happened and the barriers or nothing.” Language was a primary barrier when the Nurse arrived in the US, but she made a plan and stuck with it to overcome this barrier. This idea of determination can be seen throughout the Nurse’s interviews as she changes the term barriers to challenges, and uses these challenges to motivate herself. “You said, ‘I can’t do it.’ That’s a challenge for me. So I will prove that yes, it can be done, and that’s the same attitude that you have to have.”

The Nurse’s ability to turn negatives into positives is evident in changing the term barriers to challenges and using the challenges as motivators, but it is the Nurse’s firm belief in her own abilities that stand out through all of the interviews. “Nothing is hard for me. I know I can do it.” The phrase “I can do it” appears seven times in the transcripts of the interview sessions. Every instance is in reference to either a challenge that the Nurse has encountered or a goal that the Nurse has set during her educational path. “That’s part of my successful story here is because I do it, and I do it with all the passion, and I love it, every day.” It is that passion for her work and higher education that has continued to motivate the Nurse during her 35-year pathway toward higher education success.

The Only Challenge is My Language Barrier

According to data from the supermap, culture was coded as the second most influential concept on the Nurse’s educational path, appearing 74 times. Unlike the concept of personal perceptions and goals, the concept of culture was dominated by mitigating factors. While personal perceptions and goals was the only influence in 69% of its occurrences on the supermap, culture was mitigated by other influences 70% of the time that it appeared. While

culture seemed to be a significant influence on the Nurse's educational path, certain aspects of culture, as defined by the Nurse, had the biggest effect on her educational path—particularly, language. When asked if culture had affected her educational path, the Nurse said no, except for one aspect. “The only challenge is my language barrier, but I’m trying to improve that every day, and I will go on trying to.” The Nurse reiterated that sentiment in several places throughout her interview sessions saying: “The only element is just the language barrier; Well in my case, probably the language barrier. That’s the most difficult one. But I’m trying to do my best, and English always gonna be the second language anyway; The language barrier and all that...it was difficult; Well you know, the barriers we have as Hispanics, is like when I came to here, uh, the language barrier was the biggest one, and it still sometimes.”

To pick up the language quicker, the Nurse watched more television in English, took English classes, and sought friends who would speak with her in English instead of focusing on the Latino community. “I decide to go this way for a while until I learn more English. So that was my priority.” But language wasn’t the only cultural challenge the Nurse encountered when she arrived in the US. “The culture here is different than Puerto Rico. People here, they’re more cold. They don’t show any emotions. And second was the pace of life here is kind of fast, and over there is more laid back, slow, so when I came here, well, I had to get with the program.” The Nurse also talked about structural differences between Puerto Rico and the US, particularly as they related to her work. “I guess to say it’s like there they’re more like more behind on everything. It’s not like here. We have better structures, better systems, and it’s like everything here is so organized, but there that is disorganized, no structure. So at the beginning, it was hard for me to get into this culture here because of the differences on disorganization.” The culture shock of the US seemed to dissipate quickly as the Nurse began working in hospitals throughout

the Dallas Metroplex, moving into the system and eventually starting her own, successful business.

The Nurse's ability to adapt to the new culture was informed by a strong internal locus of control, evidenced by her determination to succeed and her personal drive to let nothing stand in her way. While the Nurse admits that barriers do exist for Latinos, her personal perceptions and goals have changed these barriers to challenges. "Well, I can say that culture is nothing that they can slow you down. I mean, we just have to overcome all of these challenges—second language, religion for some people, their religion, and that's it."

In analyzing the data associated with the concept culture, the concept of family served as a mitigating influence 32 times or 43% of the time. In 20 of those instances, family was the only mitigating influence on culture. In review of the interviews, family culture seemed to be a separate culture, and a place where ties with Latino culture could be conveyed. When the Nurse was growing up, her family culture was chaotic. She spent most weekends away from her immediate family so she could escape the chaos. Her father's alcoholism kept the family in upheaval, as did his domineering temperament. The Nurse described her father as possessive, dominant, and controlling, keeping all of his family in the house while he was at home. Her childhood stuck with the Nurse as she raised her own family. "Because it was hard for me when I was dealing with my father's behavior. This time it was like, okay, I was always trying to provide them [my children] the house that I didn't have, and the peace and the environment, so I accomplish that." At first, the Nurse seemed to replay her own childhood when she married her first husband.

The Nurse described her first husband as controlling. His goals did not seem to coincide with the Nurse's, so she felt like he was holding her back. "I guess he didn't have no ambitions

in life. Life was okay for him the way it was. For me, it was different. I want more in life. So it was two different brains.” Her husband did very little to help the Nurse as she began to further her education, and when the Nurse made the move to the US, she came without her husband. His eventual arrival was followed very quickly by his death, and so the Nurse began to rely on her mother to help her as she worked and went to college. Eventually, the Nurse met her second husband and was able to mold the kind of family she always wanted—a close family that can depend on each other for support and pass down traditions from generation-to-generation, like at Christmas time. “We always get together, and we have that since we were small children. We continue with that, and now my kids are doing the same thing. We stay together from the Christmas Eve until Christmas Day, afternoon. We never separate.” A more in-depth discussion of family follows in the next section.

It’s Very Important, Because Emotionally, You Need All This Support

While personal perceptions and goals and culture seemed to be two of the dominate concepts in the Nurse’s educational path, according to the data from the interviews, family background was also a concept of importance to the Nurse’s educational background, appearing as the third most common influence. In the supermap coding, family background appeared 48 times. Family alone appeared only seven times or 15% of the time. In analyzing the data associated with the concept culture, the concept of family served as a mitigating factor 32 times or 43% of the time. So as stated in the previous section, culture and family seemed to intertwine.

In review of the interviews, family culture seemed to play a significant role in the Nurse’s life. According to the Nurse, family and its prevalence in her educational success can best be illustrated by the quote that serves as the theme for this section: “I have what I always wanted. I

have my family. I have my four kids, and I have nine grandkids. I have my husband. I have my family, and it's very important, because emotionally, you need this support." This family support seemed to be important to the Nurse throughout her academic career.

When the Nurse was a young woman, her mother and grandmother conveyed to her the importance of education. Although the Nurse's parents were unable to offer counsel or even money for higher education, her mother did offer emotional support. The Nurse's mother said that educated people did not have to suffer and encouraged the Nurse to finish her studies. "She was always telling me, 'Go and finish your degree. Go and finish your degree. One thing that I just want from you,' and I always remember that."

Later, when the Nurse went back to school to study for her bachelor of science degree in nursing, her mother offered support again by taking care of the Nurse's children. "My mother helped me a lot, because every time I had to go to the library, she was there. She never worked, so I just took all these four kids over there, drop them off, and that's the way I did it."

Later, when the Nurse returned to college for her master's degree and doctorate, she had already established a business. Again, she relied on her family to help keep the business going while she earned her degrees. All of her immediate family members, including her second husband, are employed by her business, so having them shoulder some of the burden of the business while she completed her degree helped the Nurse shift some of her responsibilities. She believes that this family support is integral for women as they return to college. "For the woman to go back to school and obtain a higher degree, if they have a family, first you need to count on your family, because nobody else is going to help you. It's very important that you get together and obtain their support."

Because of the closeness of her family, the Nurse was able to obtain support from her family members when she needed it. She described her immediate family when she was a child as close. All of her siblings, her parents, and her grandmother followed her to the US after she arrived. The Nurse's family today remains close as well, working together in her business and seeing her as a role model. The Nurse supported all of her children financially as they went to college, but eventually withdrew her support when they began dropping classes and losing interest. Eventually, all of her children received their undergraduate degrees, supporting themselves as they completed their education. Now, all of them have completed their master's degrees, and one has even expressed interest in completing a doctorate. "I influenced them, because I didn't even have to tell them. They just went on their own, getting higher educated."

So while the Nurse's determination to succeed has played a dominate role in her life, the influence of her family and the help that they have provided in her 35-year higher education career has allowed her to get what she always wanted, higher education and a family.

CHAPTER 6

THE SCIENTIST

The third research participant, the Scientist, is the only participant representing the Graduate School of Biomedical Sciences at the health science center being studied. He was also the only Latino doctoral graduate from the Graduate School of Biomedical Sciences during the 2004-2005 academic year. I have known him for almost a year. I have known about him for much longer, because he was a favorite student of many faculty members in the Graduate School of Biomedical Sciences. Smart and outgoing, the Scientist had won a prestigious fellowship in 2004 but had discovered he had testicular cancer during the fellowship. He spent much of fall 2004 battling cancer, and the first time I saw him, he was thin and bald. A faculty member pointed him out to me as he walked out of a meeting. The Scientist spoke to a group of minority students visiting the campus that day but left quickly after speaking. I found out later he had been ill that day, but he came to the meeting anyway.

After that initial meeting, the Scientist and I talked on the telephone, and I scheduled a face-to-face interview with him. When he arrived in my office, he was a very different looking man than he had been when I saw him in fall 2004. He had a full head of dark, curly hair and had gained some weight. He looked decidedly healthier and happier than when I initially saw him. We had scheduled the meeting to talk about his recent award from the Graduate School of Biomedical Sciences and to discuss his life for a feature story that I was writing about him. In the hour he was in my office, we discussed his early education, his family, his wife, his cancer, and what his plans for the future were. He e-mailed me a few days later, saying our conversation had been the first time he had discussed his battle with cancer, and he appreciated the opportunity I had given him to deal with some of the issues he had not been able to deal with thus far. A few

months later, I received an e-mail from the Scientist about the defense of his dissertation. He invited me to attend, and I did. A few weeks later, I wrote the feature story about the Scientist and sent it to him for his approval. He told me that he and his wife would be leaving for Oregon at the end of September, so we scheduled a time to meet for lunch. From that point on, our association continued for this study.

The Scientist agreed to 4 interview sessions, but because he was in Oregon, all interview sessions occurred via telephone at his apartment. Although his wife was in another room, she never joined him during any of the interview sessions. The Scientist and his wife did discuss the interviews prior to each interview session as a way for him to prepare. The first interview lasted 1.5 hours and resulted in a transcript 19 pages long. The second interview lasted almost 3 hours and resulted in a transcript 38 pages long. The third interview lasted 1.5 hours and resulted in a transcript 19 pages long. The fourth interview lasted 1.5 hours and resulted in a transcript 17 pages long.

Each participant determined the order of the interview sessions based on the importance he or she gave to the influences used as a framework to discuss the life history of each participant. The Scientist's interviews occurred in this order: family background, personal perceptions and goals, educational background, and cultural background.

What follows is a discussion of the Scientist's life history, analysis of what he views as the most significant influence on his educational success, and the researcher's analysis of data gleaned from the Scientist's interviews.

The Scientist's Path to Success

The Scientist was born in North Texas to a middle class family. Throughout his

childhood, the Scientist was told he would go to college, and his family made choices throughout his educational career to ensure he would receive the best education the public school system had to offer.

The Scientist's parents married before graduating from high school. Following high school, his father briefly attended a local community college, and his mother graduated with an associate's degree from the same local community college about 10 years after the Scientist was born.

The Scientist's father has worked at the same company his entire career painting airplanes. Although his father says he hates his job, he continues to work at the company even though he could retire. The Scientist's mother worked for the county and later a staffing agency when the Scientist was young, but chronic fibromyalgia left her with debilitating pain, confining her to the home.

When he was very young, the Scientist's parents asked him if he was lonely without a brother or sister. When the Scientist said no, his parents no longer entertained the idea of having another child, instead the Scientist grew up as an only child.

The neighborhood where the Scientist and his family lived was a predominantly Latino neighborhood. The Scientist's extended family has lived in the neighborhood for generations, and many members of his family, including his parents, continue to live there.

Until about 6th grade, the Scientist's mother did not work outside of the home. She took him to school and picked him up from school every day. His mother stressed the importance of doing homework before anything else, making that a household rule. It was his mother's influence on his education that the Scientist draws on even today.

Because his mother worked outside the home later during his secondary education career, the Scientist spent afternoons with his grandparents, who would pick him up following school. The Scientist has a close extended family. Because of this tight family bond, the Scientist had few friends when he was growing up. The family would gather throughout the week for dinner, parties, and on special occasions.

Until the last couple of years, the Scientist's great, great grandparents were still alive, so throughout his lifetime he has had multi-generational contact on both sides of his family. Throughout his life, the Scientist's extended family members have looked to him as a source of information, to provide them with the answers to their questions about math and science. They have also provided the Scientist with a source of emotional support, telling him that he was intelligent and could accomplish anything he wanted.

To ensure he received the best public school education possible, the Scientist's parents moved him from the neighborhood middle school to a magnet school focusing on math and science. The Scientist's mother had done some research on magnet schools and decided he needed to be enrolled in a magnet program to take advantage of the enrichment opportunities offered by these specialized schools.

When it was time to enroll in high school, the Scientist went to the local magnet school for the health sciences, because he wanted to become a doctor. He became involved in extracurricular activities including basketball and clubs associated with math and medicine. The Scientist was also involved in University Interscholastic League competitions and earned a letter jacket his freshman year by advancing to the regional contest. He also volunteered throughout the community and tutored other students in math and science.

Because he was enrolled in the magnet program, the Scientist was automatically enrolled in honors and advanced placement (AP) courses. These courses put him ahead of his classmates and required extra work to maintain his grades. Because of the extra work required for these courses, the Scientist dropped out of basketball during his sophomore year. His choice of academics over athletics allowed him to enter college with 30 hours of college credit.

During his junior year, the Scientist began visiting colleges. His parents had encouraged him to apply to a variety of colleges and so had his high school teachers, but instead, the Scientist only applied to the University of Texas at Austin (UT).

The Scientist graduated as salutatorian of his class and earned enough in scholarship monies to pay for most of his undergraduate coursework. He began college the summer after his graduation in a specially-designed program at UT. The program called Preview, allowed underrepresented minority students a “preview” of the university, taking courses in the university setting, but with a limited number of students in the courses. The program was designed to ensure academic success.

The Scientist entered college majoring in biochemistry, a pre-medicine track. He lived in residence halls the entire time he was at UT, first with a friend from high school, then with someone picked by the university, and finally, the last two years of college without a roommate. While the first year of college proved to be challenging for the Scientist, he again became involved in student organizations as a way to socialize and improve his grade point average. Later in his college career, the Scientist became president of the American Chemistry Society at UT. His fundraising skills were so successful that the organization was able to provide scholarship monies for students during that year.

Along with most pre-medicine students, the Scientist took the MCAT his junior year in preparation for medical school. When he received his scores, he discovered he could enroll in almost any medical school in the country, but when he began filling out the application forms, he came to a realization—he did not want to become a doctor. After a lifetime of preparation for medical school, the Scientist was at a crossroads during his senior year of college.

The Scientist attended a graduate school fair at UT and was introduced to the McNair Scholars Program at the health science center in his hometown. He let the application deadline pass without applying but received a phone call from the admissions counselor. She urged him to apply for the program at the health science center, which he did and was accepted. He spent the summer after he graduated from UT at the health science center as a McNair Scholar, which made him realize that being a scientist was what he wanted to do.

During his graduate school career, the Scientist moved back in with his parents. He was funded by the health science center and worked in his mentor's lab. The Scientist worked with students from his high school alma mater to help them with math and science, and he organized the first invitational science fair for area intermediate school students. He served as president of the Latino graduate student association [SALSA] for two years and president of the Graduate Student Association for one year. He received a prestigious national fellowship during the summer before he defended his dissertation.

Right before he left, the Scientist began experiencing pain and swelling in his groin. A shot of steroids stopped the pain and swelling, and he left for his fellowship. Just before the fellowship ended that summer, the pain and swelling resumed. When he went to the doctor, they discovered he had testicular cancer. He returned home where he underwent surgery a few days later. Chemotherapy followed, and he was pronounced clear of cancer.

During graduate school, the Scientist began dating the woman who would eventually become his wife. They were engaged to be married and planning their wedding when the Scientist discovered that his testicular cancer had returned. He underwent surgery and chemotherapy for a second time and was again pronounced clear of cancer. Bouts of depression followed. The Scientist sought help to deal with his depression so he could return to the lab and finish his doctoral studies.

The spring of his final year as a doctoral student, the Scientist and his fiancé were married. His bouts with cancer delayed the Scientist's graduation until the end of summer 2005 when he completed his dissertation and defended it. That year, he was named the top graduate student in the Graduate School of Biomedical Sciences. He also found a position as a postdoctoral fellow at a prestigious lab in the northwestern part of the US.

The Scientist was 27-years-old when he received his PhD.

The Scientist's Perception of the Reasons for His Success

One of the research questions for this project is: What do Latino students perceive to be the reasons for their "success" in higher education at a health science center? To answer that question, I asked the Scientist what he thought was the reason for his academic success as the first question of the first interview session. In the first interview session, the Scientist attributed his success in higher education to family background. He talked about how his parents and extended family played a big role in making him what he is today. "I think those two [his parents], I credit with a lot of the, influence and reasons for my success. They have always been, one they have always been there for me, and two they made it a priority for me to be, you know, have plenty of time to work on homework, and not to mention they pounded it in my head that I

was gonna go to college whether I like it or not.” Upon further reflection, the Scientist said other influences had affected his pathway to success, but the role his parents played in his life and their high regard for education provided the strongest influences on him.

Table 4

Rankings of Color Coded Concepts for the Scientist

Concept	#Coded	Rank
Culture	118	1
Personal perceptions and goals	108	2
Family	73	3
Educational system	69	4
Mentors	24	5
Cancer	13	6
Money	8	7
Language	5	8
Helping	5	8

Note: The concept cancer is only included in this participant’s coding

In analysis of the interview sessions, the Scientist’s greatest influences on his higher education success were culture and personal perceptions and goals as indicated in Table 4. While culture as a category did dominate the supermap, what seems more significant is that it appeared 24 times or 20% of the time as the only influence on the Scientist. Culture was tempered by other influences such as family, personal perceptions and goals, and educational system. The concept family served as a mitigating concept for culture 45 times in the supermap, which seems to show the connection between family and culture. The concept personal perceptions and goals also served as a mitigating factor for culture 45 times, indicating that the Scientist’s connection between his personal perceptions and goals is intertwined with cultural background.

The concept personal perceptions and goals was ranked the second highest influence on the Scientist's educational path. While personal perceptions and goals did appear to be a dominant concept, as indicated in Table 4, the concept appeared without a mitigating factor 45% of the time. A visual inspection of the supermap shows the significant influence personal perceptions and goals has had on the Scientist's life history indicating a strong internal locus of control.

While the Scientist said family was the most dominant influence on his higher education success, the concept ranked third as indicated in Table 4, appearing 73 times. The concept family appeared the most in two interviews, cultural background and family background, accounting for 86% of the time that family appeared on the supermap. The influence appeared only 17 times without mitigating factors, with 13 of those appearances associated with the family background interview.

The influence educational system ranked fourth appearing 69 times. Education appeared as a separately coded concept 31 times on the supermap or 45% of the time. Since the Scientist started his interview sessions by tying his parents to education, it seems the two concepts are integral to each other and indeed are within four points of each other.

There is a 45-point difference between education and the next most frequently coded concept, mentors, which ranked fifth. Most of the cells that were coded as mentors were also coded with another concept. Just four cells coded as mentors had that coding only.

A unique coding to the Scientist based on its influence on his educational path was the concept cancer. Cancer ranked sixth and was coded 13 times on the supermap. Because the concept was only briefly discussed in two of the four interview sessions [cultural background

and personal perceptions and goals], it seemed to have an unusually low appearance on the supermap, despite its impact on the Scientist's most recent life.

Money seemed to have very little impact on the Scientist's path, appearing just eight times and ranking seventh as seen in Table 4. The concept was coded alone in three instances or 38% of the time. The concept appeared most frequently in the interview session on the influence personal perceptions and goals in relation to the Scientist's ability to pay for his education through scholarships and graduate assistantships. During the interview process, the Scientist discussed his parents' ability to provide educational enrichment activities for him without discussing the barrier of money.

Language ranked seventh in Table 4 appearing five times on the supermap. The concept appeared most often in the interview on cultural background. During the interview process, the Scientist did discuss his inability to speak Spanish, lamenting the fact that he could not understand or speak Spanish; however, the barrier of English as a second language did not exist for the Scientist, since English is his only language. This is a unique finding to the Scientist, since Spanish was the first language for the Family Doctor, the Nurse, and the Internist.

The concept helping also appeared five times on the supermap and ranking seventh, exclusively in the interviews on educational background and personal perceptions and goals. The concept was mitigated by the concepts mentors and education. During the interview process, the Scientist even referred to the help provided by mentors and the help that he in turn provided to lower-level students when he was active as a tutor.

Another phenomenon particular to the Scientist is a focus on education. While the Scientist indicated that his parents valued education, he clearly valued education as well, finishing high school as the salutatorian of his class and choosing his academic ambitions over

athletics during his high school years. This finding seems to indicate not only a strong educational background provided by the Scientist's focus on the educational system, but a culture of education that was developed in the Scientist's household and in his life. This culture of education, perpetuated by his parents and adopted by the Scientist, resulted in an ingrained focus on education that became second nature. This assertion is borne out by the four dominant factors gleaned from interviews with the Scientist: cultural background, personal perceptions and goals, family, and education. This finding also corroborates the theories of Pace (1980) and Tinto (1993), who have noted that success in higher education is associated with a mix of various factors, including educational background, family support, personal motivation, and culture.

While the Scientist maintained that family background was the reason for his success, upon further clarification, he believed that his own value of education learned from his parents, allowed him to succeed in higher education.

Analysis of the Scientist's Interview Sessions and Resultant Themes

What follows is an analysis of the Scientist's stated themes as inferred from the interview sessions. The Scientist's themes are "I think I had a pretty good foundation"; "Everything else I did, that was fine, but the education was key"; "Usually, the focus kind of puts my mind at ease"; and "In a way, culture has, on a very basic level, been an influence."

I Think I Had a Pretty Good Foundation

When the Scientist began his interview sessions, he named his parents and his extended family as the influence that played a big role in who he is today. Throughout the interview sessions, the Scientist outlined other influences on his educational pathway, but in the final

interview session, he reiterated his first assertion, which is the theme for this section. “I think the biggest influence is still family. A lot of family support, a lot of family influence. I think I had a pretty good foundation.” Analysis of data from the supermap did not show this concept to be the dominate one using the mind mapping technique. According to analysis of data, culture was the dominate influence on the Scientist’s educational path with his personal perceptions and goals serving as the second most recorded influence using the mind mapping technique. Family appeared on the supermap 73 times or as the third highest influence, according to analysis of data, with the majority of inclusions in the cultural background and family background interview sessions.

In looking at the interview sessions, it is clear that family background or family influences did play an important role in the Scientist’s educational pathway, and a possible reason for fewer inclusions on the supermap may be related to the idea behind the theme for this section: That family is a foundation. Since the concept of family was included most frequently in the interviews on family background and cultural background, it seems that the Scientist most associates family with culture. The Scientist’s consideration of his family as providing a good foundation for him could explain why the influence family appears only eight times in the educational background interview and just two times in the personal perceptions and goals interview. The firm foundation provided by his family allowed the Scientist to grow into his own ideas and become his own person. This idea is conveyed by him in the cultural background interview when he is discussing the different aspects of culture and how they have influenced his life. “A lot of influences in my life are involved in how I am today...My parents ideals, I think I’ve at least to me I’ve kind of improved on them. I think theirs, I’m not saying that theirs weren’t any good, it’s just they’re different. I don’t have the exact same ideals. I agree with some

of the things they say or some of the things that they've done, but I don't agree with them on everything. Not to say that they were wrong. I just think differently.”

This difference in opinion has led to some arguments throughout the Scientist's life. When he was in high school, the Scientist's parents did not want him to socialize outside of the family unit. His desire to go to parties and hang out with friends was often thwarted by his parents' need to know everything that would happen at the party. Eventually, the Scientist gave up on a social life in high school, even though he argued with his mother about her overprotective behavior. These differences of opinion continue today between the Scientist and his family and still manifest themselves as arguments. “For a while there, my mom and I would get into little arguments about things [in reference to religion]. In a way, she still believes that the teachings from the Catholic faith are pretty much set in stone. That's how it should be. I'm thinking you know some things cannot be.”

But despite their disagreements, the Scientist and his parents remain close. His parents attended the Scientist's dissertation defense, and they continue to provide emotional support to him. The Scientist used the word supportive 8 times in describing his parents during the interview on family background. The word was used during the interviews in two other instances, when the Scientist was discussing how to get more Latinos involved in higher education and his battle with cancer during the final interview on cultural background. When I asked him to describe his parents, the Scientist said: “Two loving, caring people, who have been supportive of me from the beginning, and they really pushed me to be the best that I could be.” The Scientist even talked about how his parents offered their emotional support to him during the graduate school experience. “Even when I got really, really down about just the trials and issues of being a graduate student, long hours and minimal pay, or whatever, they were really

supportive and kind of helped me really focus on the long-term goal of this, saying: ‘You know; it’s the training.’ I think they really helped me focus on why I was doing what I was doing at the time.” The Scientist also moved back in with his parents during the beginning of his graduate school experience, so they provided some financial support during that time. This strong support for education seemed to provide the Scientist with a culture of education in his home that seemed to affect his entire life. This culture of education, in addition to other aspects of education as defined by the Scientist, can be an explanation for why culture is the dominate concept on the supermap and not the concepts family or education.

Everything Else I Did, That was Fine, But the Education was Key

The Scientist’s assertion that family background played the biggest role in his success can best be viewed through the lens of education and his parents’ value of education. Because of his parents’ focus on education as the key to success, the Scientist’s pathway toward higher education success was somewhat traditional, with his parents playing what would be considered a traditional parental role. This can be seen in the theme for this section, especially considering that this is the explanation the Scientist gave during the first interview for why his parents have been so influential in his higher education success. “One other role that they [his parents] played in my life is that they had a high regard for an education and only wanted me to get that. Everything else I did, that was fine, but the education was key.”

According to the supermap, education appeared 69 times, serving as the fourth highest influence on the Scientist’s educational path. But because the Scientist linked the concept of education with his parents, or the concept that he considered to have the greatest influence on his

higher education path, education may have a greater impact on the Scientist's educational pathway than the coding system indicates.

Throughout the interviews, the Scientist associated his parents with education. "They never let up on the fact that I was going to go to college; If I needed help during my education, they helped however they could; My parents, well my mom especially, was not real big on I guess academic competition. She didn't want me to get into the habit of trying to be better than someone else grade-wise, just kind of improve on what I'd done prior to that; They decided that I should go to where I could get the most out of my education and got me into the ISD's magnet programs; If they hadn't been so into pushing me towards going to college, I don't think I would have, I don't think I would have been or be where I am today without them." This strong association between the Scientist's parents and education, particularly higher education, resulted in a culture of education in his household.

A culture of education was evident since the Scientist's parents focused on the importance of education in every aspect of his life. The Scientist's mother made sure he did homework before anything else when he came home from school. The Scientist's mother researched magnet school programs and enrolled the Scientist in a magnet school program, so he would get the best education the public school system could provide. The Scientist's mother and father continually told him that college was not an option. It was mandatory. The Scientist's mother enrolled him in pre-Scholastic Aptitude Test preparatory courses during the summer, so he would do better on the exam. The Scientist's father assigned him book reports during Christmas vacation, so he would do better on the SAT. By their words and actions, the Scientist's parents created a culture of education in the household, placing value on education before anything else and providing enrichment activities through conventional and

unconventional means. This culture of education was eventually transferred to the Scientist and internalized, propelling him toward higher education success. This can be seen in his graduation as salutatorian of his high school class, and finally, his success as a doctoral student and graduate.

Later in his educational career, the Scientist's own value of education is revealed in his adoption of his mother's principles of academic success. "I think academic success is just to be doing better than what I'd done previously," a sentiment that echoes his mother's belief that academic competition should be internal not with other students. So the culture of education created by his parents resulted in the Scientist's own internalized drive to do better than he had done in the past, a trait he learned under his mother's tutelage.

Usually, the Focus Kind of Puts My Mind at Ease

This theme for the Scientist is an extension of the culture of education created in his life. This culture of education, created by his parents and adopted by the Scientist, revolved around a focus on education. When he was younger, the Scientist's parents required him to focus on his homework before he could do anything else. His mother had established this as a household rule, which later resulted in the Scientist abandoning basketball as an extracurricular activity so he could focus on his advanced placement (AP) courses. This idea of focus is the theme for this section. "When I'm preparing for something, I like to give it, I like to focus on it as much as possible, make it my direct focus. Usually, the focus kind of puts my mind at ease." This idea of focus on something to the exclusion of other activities was promulgated by the Scientist's parents when they required him to focus on his homework before doing anything else. The necessity of focusing was what the Scientist did throughout his higher education studies.

To illustrate the importance of focus to the Scientist, the term was counted in the personal perceptions and goals interview. The term focus appeared 17 times in the 38-page interview session on personal perceptions and goals; the term focused appeared 11 times; the term focuses appeared two times, and the term focusing appeared one time. Clearly, the idea of focus is important to the Scientist. That becomes even clearer when searching the other interview sessions for the word focus and its derivatives. In the 19-page interview about family background, the term focus is used 7 times, and the term focused is used twice. In the 19-page interview on educational background, the term focus is used 3 times; the term focused is used 7 times, and the term focusing is used twice. In the 17-page interview on cultural background, the term focus is used 6 times; the term focused is used twice, and the term focusing is used once. All total, the terms focus, focuses, focused, or focusing are used 61 times during the Scientist's four interviews.

Not only was focusing on his studies important to the Scientist, but he also used the concept of focus to help him deal with cancer, which according to him in the final interview, was the only barrier to his academic success. "Educationally, it [cancer] has, I think it's made me work harder. Not that having cancer would prevent me from doing anything. It's just making me want to focus a lot more. It's motivated me to another degree into finishing grad school, that's for sure." Taking the theme for this section and applying it to the Scientist's need to focus during his battle with cancer may explain the need for his focus. Because he focused, the Scientist was able to better cope with cancer and its effects on his life, since being able to focus puts his mind at ease.

In a Way, Culture Has, on a Very Basic Level, Been an Influence

Analysis of data from the supermap showed that culture was the dominate influence on the Scientist's educational path, appearing 118 times on the supermap, with 54% of those appearances or 64 occurring in the interview session on cultural background, which could explain why culture was the dominate theme on the supermap. Because family, education, and personal perceptions and goals seemed to be interrelated for the Scientist in his educational path, the concepts were harder to measure. The concept of culture, according to the Scientist, is more diverse. "I kind of see myself as a little bit of everything."

The Scientist elaborated on how culture has affected his life in the interview session on cultural background, establishing the theme for this section. "You know when you're growing up or you start becoming interested in something, then you try to look and see who you can ask for information. When you're growing up, the first thing, the first person you identify is someone who looks like you, and for a long time, it was hard to find someone who looks like me in science. Growing up, they hardly ever showed up at elementary school functions or middle school. You start wondering if there are some, and if there are wherever. And you know, basically in high school, that's when you start saying okay there are Hispanics or people that may or may not look like me in science or medicine. At least you begin to see them at this point. So, in a way, culture has, on a very basic level, been an influence." It is clear that the Scientist believes a lack of Latino role models affected him growing up, and his experience in higher education has pushed him to be an advocate for Latinos in higher education, particularly in science. However, when it comes to culture, the Scientist's view of himself is related to how he has lived his life.

As a child, the Scientist was close to his immediate family. While all of his family members are Latino, his parents never learned Spanish and never pushed the Scientist to learn Spanish, nor did they focus on the Mexican American culture. Consequently, the Scientist sees himself as diverse. “I think overall, I have a hard time with culture and just seeing the whole real definition of it. Culture to me just means what you identify yourself with. I don’t think everyone’s culture is the same.” For the Scientist, this also means that culture evolves. “It changes throughout your life. Each life experience, event has some influence on your views.” Because the Scientist’s definition of culture is so inclusive, this may also play a role in the concept of culture dominating the supermap. If the Scientist views culture as a multifaceted and multidimensional concept, then it only stands to reason that culture would have a place throughout his life and throughout the other influences.

No matter how culture became the dominant concept on the supermap, it is also clear that a culture of education is within the Scientist’s concept of culture. That idea is clear as the Scientist describes how culture has affected his life. “I think now it’s been a, more of an influence than it has been. I think one aspect of my culture is being a Hispanic graduate student. You know, I was pretty happy about that. I’m still pretty proud of it. You know, I became another Hispanic who went on to get a PhD. For me, I’d like to see more Hispanic students go through and get a PhD or go on to more higher education, or you know, go to college at least.” The Scientist sees it as part of his duty to promulgate the culture of education within the Latino community and convince more Latino students to attend college and go on to doctoral-level coursework. To that end, the Scientist helped start a club, Society for the Advancement of Latino Scholars in America [SALSA], in graduate school, specifically focusing on helping Latino students as they traverse graduate education at a health science center. The Scientist also visited

high schools and elementary schools to talk with students about science and provided tutoring to students who needed extra help. He even helped start an invitational science fair at one of the local middle schools, comprised of predominantly underrepresented minority students.

Another influence has also permeated the Scientist's life, but only in the past couple of years: cancer. While the Scientist's definition of culture encompasses all aspects of his life, so does cancer. "I think it influences a lot of the areas that I've discovered at this point, but that's the nature of cancer. It doesn't affect you in one way. It affects everything." In review of the Scientist's definition of culture as anything that affects you, cancer has provided a change in culture for the Scientist. Cancer has had an all-inclusive effect on the Scientist's life in the short time it has been active, and the Scientist's bout with cancer has even affected his desire to help get more Latino students into higher education. "I kind of see myself wanting to help out in that area [cancer] more than in the minority area now. That's not even for science, but just on a personal level, to help me cope and somehow help someone else cope as well." The specter of cancer continues to change the Scientist's culture and alter his perception of life based on his fears of recurrence and changes in his body that have occurred because of cancer, including physical and mental changes. In the final interview on cultural background, the Scientist counted cancer as his only barrier to higher education success. "Any other barrier has seemed small, insignificant, and not as, not as difficult." This discussion of cancer and its impact on the Scientist's life also likely added to the increased incidence of culture as a concept on the supermap.

Because his battle with cancer is so recent, its effects may have an unusually large influence on the Scientist.

CHAPTER 7

THE INTERNIST

The fourth research participant, also representing the medical school at the health science center being studied, said yes to my group e-mail request to participate in this study. I had never met the Internist prior to his participation in this study. The only knowledge I had of him was a class photograph I discovered at the health science center.

The Internist was one of seven Latino graduates from the medical school during the 2004-2005 academic year at the health science center being studied. Because the Internist was still in his residency, leading a team of residents, interns, and medical students at a busy county hospital and holding clinics throughout the week, he had little time to devote to the interview process; therefore, some of the interviews were postponed or interrupted and picked up at a later date. The Internist consented to four interviews. All interviews took place during a 2-week time period via telephone. Three of the four interviews took place after 10 p.m. when the Internist's wife and son had gone to sleep. One interview took place on the Internist's day off with his wife and son coming in and out of the room during the interview. All interviews took place at his home. The first interview lasted 1.5 hours and resulted in a transcript that was 10 pages long. The second interview lasted 2 hours and resulted in a transcript 23 pages long. The Internist's wife joined him during the interview. The third interview lasted 45 minutes and resulted in a transcript 6 pages long. The Internist's wife and son came in and out of the room during the interview session. The fourth interview took place over 2 consecutive days and lasted a total of 45 minutes resulting in a transcript 7 pages long.

The other three participants determined the order of the interview sessions based on the importance they gave to the influences. The Internist determined the first interview session; he

then asked me to choose the order of the rest. The interviews occurred in this order: family background, educational background, cultural background, and personal perceptions and goals.

What follows is a discussion of the Internist's life history, analysis of what he views as the most significant influence on his educational success, and my analysis of data gleaned from the Internist's interviews.

The Internist's Path to Success

The Internist was born in Chile. When he was about 1 year old, his family moved to the US. The young family moved into a house with a woman they knew. The family shared one room so they could save money to purchase a home. The Internist and his family were illegal immigrants to the US. His father was high school educated and knew no English when the family arrived in the US. He took multiple factory jobs to help support his family. The Internist's mother had a college education from Chile, but also knew no English when the family arrived in the US. His mother stayed at home with the Internist until he began school.

The Internist's father worked multiple jobs so the family could purchase their first home. Soon after they arrived the family moved into a small apartment they purchased, then a house, then a bigger house, and finally a four-bedroom house near Houston.

As the family stayed longer in the US, they began to learn English. The Internist was learning English and Spanish in the home but was having a difficult time acquiring either language. His parents took him to a language specialist who told them to only speak English in the home. From that point on, the Internist's parents spoke only English to him, limiting his ability to speak Spanish. Because his parents were not native English speakers, the Internist had

a difficult time learning English as well, which has continued to hamper his verbal and reading abilities throughout his life.

Because he and his family were illegal, the Internist began classes in private school to avoid questions regarding the family's legal status. The Internist began his educational career in a private, Episcopalian school. The Internist found the techniques used by the school to be overly harsh, and his parents even commented that he lost some of his happiness when he began classes there.

Throughout his life, the Internist has had asthma, and during his 3rd grade year, he missed many classes because of his medical condition. Although his grades were good enough to continue to the 4th grade, his parents were unhappy with his progress and chose to hold the Internist back for a second year in the 3rd grade. The family moved at the same time, and his parents enrolled the Internist in a private, Catholic school where he stayed from 3rd until 6th grade. The Internist described the school as a better learning environment for him with the administrators and teachers making learning fun. Because private schools were so expensive, the Internist's father continued to work multiple jobs.

The Internist made a decision in middle school to attend public rather than private schools. The financial strain that had been put on the family was something that could be alleviated by the change, and the Internist and his family had become permanent residents of the US so there was no longer a need for him to attend private school to protect their residency status in the US. The Internist became a citizen in 1994.

Many years of private school had given the Internist an educational advantage. His parents pushed for him to be placed in advanced classes when he entered public school, and he was. Beginning in junior high, the Internist took advanced courses until he graduated from high

school. The atmosphere in the public school was different than the private schools he had attended. Although he had been the only Latino student in most of his classes in private school, the Internist experienced little in the way of discrimination or overt hostility based on his race or ethnicity. When he began public school, the Internist began experiencing racism from his classmates. Throughout his middle school and high school years, the Internist was called derogatory names, but instead of fighting back, he ignored the names and continued his push toward excellence.

The Internist's parents had always fostered an environment of self-development in their home. His father had pushed the Internist to do his very best in whatever activity he undertook. He even began coaching the Internist in soccer so he could work with his son in developing discipline. The Internist's father continued to coach him in soccer until high school.

The Internist was part of a soccer family. The Internist became so competitive in soccer that he competed at the national level, which was when he met a young man from Colombia, who was also a good soccer player. The two started as rivals but became friends. It was a short time later that the Internist's parents decided to adopt his friend from Colombia, and the two became brothers.

Both boys were very competitive in soccer and were scouted by the Olympic team. The Internist's brother, who was older, went to college on a soccer scholarship and became a professional soccer player. The Internist was headed along the same path as his brother, but a course in high school changed his mind.

The Internist took an anatomy course in high school. The teacher was a physician who inspired the Internist to re-evaluate his life plans. Suddenly, a world of knowledge and curiosity opened for the Internist, and he was hooked on becoming a doctor. Because he could not figure

out a way to play soccer and study to become a doctor at the same time, the Internist turned down soccer scholarships, instead taking academic scholarships to Baylor University where he became a pre-medicine major.

Throughout his primary and secondary education, the Internist had sought help from his parents on homework. Although his parents, particularly his mother, continued to provide help on Spanish throughout his educational career, the Internist could no longer rely on his parents' help beginning in 4th grade. His parents did encourage their son to seek help from other sources. Beginning in middle school, they had their son enrolled in school year-round. One summer, they even sent him to Chile to visit relatives and enrolled him in courses in a Chilean school. Because the Internist spent every summer in middle school and high school taking classes in addition to the regular advanced classes he was enrolled in, he entered college with 20-24 credit hours.

When the Internist entered Baylor University, a new world opened for him. He lived in the dormitory his first year in college, and he suddenly had freedom to explore a variety of things. The distractions that ensued, such as parties and girlfriends, left him with okay grades during his freshman year, but grades that would not be sufficient to get into medical school. He retook some courses to bring up his grades and moved out of the dorm. The Internist's father bought him a town home following his freshman year, and the Internist lived there for the rest of his college career at Baylor.

While at Baylor, the Internist was involved in several student organizations, including the medical fraternity and the club soccer team. The soccer team even went to the national championships during the time he was at Baylor, but following his freshman year, the Internist didn't allow extracurricular activities to interfere with his drive to become a doctor. He did, however, have a dilemma. The Internist had become interested in forensics, and he was unsure

about going into forensics or medicine, so he held off officially declaring a major for as long as possible since one of his teachers was in the process of developing a forensics degree program.

To see if he liked medicine, the Internist's mother suggested that he come back home following his freshman year, take the classes to become a certified emergency medical technician (EMT) and work during the summer. His mother found the certification program at the community college where she was teaching, so the Internist took the classes, got certified, and began working as an EMT in the Houston area. He lived with his parents during the summer and got firsthand experience in medicine. When he began his sophomore year at Baylor, the Internist was even more convinced that medicine was for him, but he still wanted to integrate his love of medicine with forensics.

After a successful sophomore year, the Internist applied to summer programs offered at medical schools throughout Texas. The programs, focusing on disadvantaged and minority student recruitment, gave college students firsthand knowledge of medicine, research, and medical school. The Internist was accepted into a program called Bridges to Medicine. He worked on preparing for the Medical College Achievement Test during the summer, taking the test as part of his preparation. After the program ended, he flew to Miami then Louisiana for similar forensics programs. Following his junior year, again the Internist was accepted into a summer program at a Texas medical school. The program called Summer Multicultural Advanced Research Training program placed him with the medical examiner for the entire summer where he learned more about forensics and participated in various aspects of medical forensics. Following his senior year, the Internist was accepted into another program at a Texas medical school. The program focused on virology research, which further confirmed his belief that he wanted to go into medicine rather than research.

Because he became more and more interested in forensics, the Internist began working with a professor at Baylor who was designing the forensics program. The Internist became a test subject for the possible courses to take to major in forensics, so he ended up returning to Baylor following the summer program in virology. To complete his biology major and chemistry minor, the Internist spent 4.5 years at Baylor University, graduating in December. The forensics program was approved following his graduation.

The Internist was accepted to the medical school he eventually attended, but classes did not begin until August. So for 7 months, the Internist visited with family and traveled around Chile. While he had gone to Chile before to visit his family, the 7-month trip allowed him an opportunity to learn about the country of his birth and improve his Spanish. While in Chile, the Internist met a woman who would eventually become his wife. Just a few days after meeting her, the Internist met his father at one of the highest mountains in Chile, and the two of them climbed to the top. It took two weeks to climb the mountain and two weeks to return. Following the climb, the Internist and his father went whitewater rafting, and then the Internist returned to begin his courtship of the woman who eventually became his wife. The Internist and his newfound love traveled all over Chile for the next few months. When it came time to return to the US, the Internist asked his girlfriend to return with him and study English. She agreed and the couple lived together throughout the Internist's entire medical school career. Although she knew little English, the Internist's girlfriend began a master of business administration program at a local college near the medical school and completed the program with honors during the Internist's second year of medical school. They were married during his third year of medical school. The couple had their son during the Internist's fourth year of medical school when the Internist was traveling around Texas doing multiple internships. The Internist's wife stayed at

home for a year following their son's birth. When the Internist got his residency, his wife began working at the medical school where he is completing his residency.

One of the places where the Internist did an internship was where he ended up doing his residency. Throughout medical school, the Internist took an internal medicine path, working with a physician who does extensive research on diabetes. The effect that diabetes has on the Latino community pushed the Internist to focus on endocrinology and diabetes as a way to help his community. When he was searching for places to do a residency, the Internist wanted a place where he could continue a fellowship in endocrinology following his internal medicine residency. He worked with the director of the residency program at the medical school where he is now doing his residency and decided that that was the place for him. The director wanted the Internist as well, so the Internist got his first choice of a residency. The medical school and hospital is also near his parents, so after many years of college and wanting to be closer to his family, the Internist was able to be near his family again.

The Internist was 28-years-old when he received his doctor of osteopathic medicine degree.

The Internist's Perception of the Reasons for His Success

One of the research questions for this study is: What do Latino students perceive to be the reasons for their "success" in higher education at a health science center? To answer that question, I asked the Internist what he thought was the reason for his academic success as the first question of the first interview session. In the first interview session, the Internist attributed his success in higher education to family background. He talked about his belief that the way a person develops is based on family influences. "I'm a big proponent of a lot of the way a person

develops is by their family. My parents were always expecting nothing but the best of me, and they pushed me very hard, and I'm thankful for that. I think a lot of the reasons why people get to where they are today is because of family.” The Internist said that he mimicked his parents’ values when he was growing up and does so even today, but it was the role his parents played in his life and their high regard for self-improvement that provided the strongest influences on him.

Table 5

Rankings of Color Coded Concepts for the Internist

Concept	#Coded	Rank
Educational system	105	1
Personal perceptions and goals	102	2
Culture	96	3
Family	91	4
Language	10	5
Mentors	10	5
Helping	9	6
Money	9	6

As indicated in Table 5, the Internist’s greatest influences on his higher education success were educational system and personal perceptions and goals. These two influences were only separated by three appearances on the supermap, which could indicate that their individual influences on the Internist are relatively equal. In review of mitigating influences, education seems to have less power, appearing only 29 times out of 105 or 28% of the time as a singular influence. In fact, the mitigating influences of personal perceptions and goals and culture appeared more times with education than the concept appeared alone. The mitigating factors personal perceptions and goals and culture appeared only one time in the interview session on family background. Instead, the concept family was paired almost exclusively with the concept

education during the family background interview. This finding fits into the Internist's assertion that his family was a strong influence on his educational pathway, particularly because of their belief in self-improvement.

The third largest influence on the Internist's educational path was culture as indicated in Table 5. The concept culture appeared as the only influence 22% of the time. The concept was mitigated predominantly by family, personal perceptions and goals, and education. Again the concepts of family, personal perceptions and goals, and education seem to be intertwined with culture as indicated by the data.

The concept family was ranked the fourth largest influence on the Internist's educational path, acting as the only influence 20% of the time. Family was mitigated by culture, personal perceptions and goals, and education.

A significant difference exists between the number of appearances in the top four influences and the fifth influences language and mentors as indicated in Table 5. The sixth largest influences on the Internist's educational path of helping and money are separated from language and mentors by one. The significant difference between the top four influences and the bottom four influences and the internal consistency between the top four influences and the bottom four influences within the Internist's supermap seem to indicate that the influences are bifurcated, acting as two influences rather than eight. In review of the secondary data, it appears that the top four influences do not act independently the majority of the time. Education acted as an independent influence 28% of the time. Personal perceptions and goals acted independently 36% of the time. Culture acted independently 22% of the time, and family acted independently 20% of the time. In contrast, these four concepts were always mitigated most heavily by each other. This finding again corroborates with the theories of Pace (1980) and Tinto (1993), who

have noted that success in higher education is associated with a mix of various factors, including educational background, family support, personal motivation, and culture. Because of the bifurcated nature of the data analysis, this finding is evident in the Internist's educational path.

While the Internist maintained that family background was the reason for his success in the final interview session, he believed that his family had fostered a culture of self-improvement. Since he believed that his own values were learned from his parents, his personal perception of the importance of self-improvement allowed him to succeed in higher education.

Analysis of the Internist's Interview Sessions and Resultant Themes

What follows is an analysis of the Internist's stated themes as inferred from the interview sessions. The Internist's themes are "I'm a big believer in the family"; "The importance of self development, it was very high in the environment"; "It's just really an unquenchable, unsatisfying passion for knowledge"; and "I never felt like I belonged to any group in particular..."

I'm a Big Believer in the Family

When the Internist began his interview sessions, he said that his family was the strongest influence on who he is today. Throughout the interview sessions, the Internist continued to go back to his view that family background was an important part of his educational success, but during his first interview session, the Internist succinctly stated what he believes, which is the theme for this section. "I'm a big believer in the family. I think that a lot of our today's society problems is pretty much because of a lack of family structure now, and the reason that I say that is because you pretty much mimic what your parents do in life. You pick up their habits."

Analysis of data from the supermap did not show the influence family to be the dominate one using the mind mapping technique. According to analysis of data, education was the dominate influence on the Internist's educational path with his personal perceptions and goals serving as the second most recorded influence using the mind mapping technique. Culture was the third most frequently recorded influence on the supermap, and the concept family appeared on the supermap 91 times or as the fourth influence, according to analysis of data.

In analysis of the interview sessions and the secondary data or mitigating influences associated with the top four concepts, it is clear that family background did play an important role in the Internist's educational path. The Internist listed family as one of his passions in the cultural background interview. "My passions by far, number one to be a good father to my son and to lead by example. Others would be of course to be the best husband I can be to my wife and to have a strong healthy family." He even listed providing a strong family unit as a life goal, holding even more weight than any career accomplishments. "My number one goal is my family life; one goal, of course, is for me to be a great father to my son and to my other children that will come along the way, and to help them be good human beings. My other goal, of course, is to be the best husband I can be, be a great supportive partner." The Internist even used his family as a barometer to help measure the best residency slots. "So we're talking the pathology, and we're talking about being able to speak Spanish, and the area was very family-friendly. And of course, the next thing was that it was close enough to my parents." The family-friendly nature of the hospital where the Internist is doing his residency is a nod to his wife and son. His wife even works at the hospital where the Internist is doing his residency, but the proximity to his parents was a factor that the Internist tried not to weigh into his residency decision even though he realized it would be hard to ignore. "I was wanting, of course, I had been away from my parents

through college, of course. I did talk to my parents either every day or every other day. They're very involved every day. They want to know what's going on in my life. It's one of the reasons that I got to where I am today because of their support."

Because of his close ties with his parents, the Internist still describes himself in terms that include his relationship with his parents. The Internist provided a unique perspective to the self-description question. The Internist included nouns along with the typical adjectives that other participants used when describing themselves. The first noun used was father, followed by husband, and finally child, so while the Internist does seem to place his current family unit first in his life, he still holds strong ties to his parents. This close association may be related to the isolation that the Internist felt growing up with only his parents and an aunt in the US. While he did take trips to Chile to visit relatives, they were not available on a daily basis, so he relied heavily on his parents for support when he was growing up, and they did not disappoint. "They placed me number one in their lives." It was this example that the Internist mimicked in his own family. "Well, like I said, my parents put me first. I put my little one first; He's [the Internist's son] the first thing that comes in my life right now, so I will drop everything for something that he's doing." The Internist has taken the practices of his parents and adapted them to his own life, or as he explained during the first interview session on family background, he has mimicked his parents' habits. Through his own actions not just his words, the Internist clearly shows that family background is the dominate influence on his educational background, but his definition of family background seems to spill over into the concepts of education, culture, and personal perceptions and goals.

The Importance of Self Development, It Was Very High in the Environment

The concept of education appeared on the Internist's supermap 105 times as the dominate influence. Although the influence appeared 105 times, it appeared as a singular influence just 28% of the time. This statistical analysis alone leads to the conclusion that some other influence or influences had a profound effect on education or acted in concert with the dominate influence. In review of the Internist's interviews, the idea of influences acting in concert or melding together is clear, especially when reviewing the theme for this section, which is a partial quote from the third interview on cultural background. The Internist was attempting to explain how culture has affected his life. "Like I said, my culture, in the sense of the family upbringing, my parents weren't religious people, so I can't believe religion had anything to do with it. But just the culture of the importance of family, the importance of self development, it was very high in the environment. That included things from sports to music to always education and knowledge and experience. Those all had a part of the development." Within this one quote, three influences are mentioned by name and obviously melded in the Internist's experience--culture, family, and education. Since this quote is a statement of belief or personal perception from the Internist, the influence personal perceptions and goals is also part of this quote. So it seems that the Internist does correlate the influences education, personal perceptions and goals, culture, and family, as previously indicated in analysis of the data. His actual words during the final interview on cultural background seem to support this assertion.

The connection between family background and educational background is evident throughout the Internist's interview sessions. During the first interview session on family background, the Internist talked about how his parents made sacrifices to make sure he attended private schools. They even pushed for him to be placed in advanced classes when the Internist

began public school in middle school, expecting nothing but the best from him. Despite their focus on education, the Internist knew his parents' support was predominantly emotional in nature. "It wasn't until about 3rd or 4th grade where I was kind of doing really well on my own at that point. And it wasn't until high school, actually junior high, when I got into 6th grade. At that point, I kind of learned that it was pointless for me to ask for any help from my parents. I pretty much went through the rest of it by myself. My mom helped me out as much as she could. I think my parents knew their limitations. The only recommendation that they could make, and it really wasn't a recommendation, it was forced upon me, were when I went to school, even if I had an A in the class, I still had to go to tutorials. Unless I had a 100% in the class."

In the second interview on educational background, the Internist talks about how his parents held him back in the 3rd grade. The Internist had suffered severe bouts of asthma that year and had missed quite a bit of classes. He had passed his classes, but his parents were not pleased with the results. "I missed so much school that I passed, but my parents thought it wasn't good for me to go on. I passed with, you know, sufficient scores, but again, my parents had high standards for me, so they were scores that they wouldn't think that I would do well to keep on going forward with. So they decided to have me repeat the year."

In addition to requiring the Internist to attend tutorials during the regular school session, his parents believed that hard work was important and taking a summer vacation did not fit into that equation. "My parents also didn't believe in me having the summer off, and so pretty much from 1st through 9th, actually from 8th grade all the way through 11th grade, no 12th grade, I took summer courses. They didn't want me to be someone who would just sit around the house all summer long and not do anything."

In the third interview on cultural background, the Internist discussed how his parents' ability to put him first and the push to be the best he could be impacted his educational experiences. "Like I said, because my parents put me first and they pushed me to be the best that I could be, it helped me with my education. They may not have had the resources to support me, but they found other resources to do so." And finally, the fourth interview session on personal perceptions and goals shows the Internist's views on education and family to be consistent with what he learned from his parents. "In my eyes, a person can never feel that they're totally successful. Uh, because I think there's always something to be worked on. I think we're striving for perfection, or at least I am, but I don't think we'll ever quite get there." This assertion of the Internist's beliefs mimics his parents' beliefs that tutoring was necessary for him even if he had an A in the course. There was always room for improvement. Without establishing where this belief system received its genesis, a retrospective look at how his parents established the value of education and self-improvement links the Internist's personal beliefs to the foundations of his youth and his parents' beliefs.

It's Just Really an Unquenchable, Unsatisfying Passion for Knowledge

Personal perceptions and goals seemed to play an important role in the Internist's educational path. The influence appeared 102 times on the supermap as the second dominant influence, appearing 36% of the time as the only influence. While this concept has the highest singular influence on the Internist's educational path, measured by percentage of total appearances, it is still well below 50%, leading to the idea that mitigating influences also played a dominant role on how personal perceptions and goals influenced the Internist's path. The quote used as the theme for this section shows the intermingling of two influences, education and

personal perceptions and goals. “My other passions would be, like I told you before, it’s just a really unquenchable, unsatisfying passion for knowledge. That’s what I think also drove me into medicine. It’s just you know, I want to know more and more, and medicine, you know it’s everything I could ask for in that regard.” The Internist’s self-derived desire for knowledge seems to be clear in the quote used as the theme for this section indicating a strong internal locus of control.

The word knowledge is used by the Internist in the interview on personal perceptions and goals 12 times. He used the word knowledge five times in the interview on educational background. Throughout the four interview sessions, the Internist used synonyms for knowledge to express his view of the concept. He used the words curiosity, smart, having brains, and intelligence as synonymous for knowledge.

Throughout the four interview sessions, the Internist expressed his own perceptions regarding knowledge and intelligence. He equated intelligence with curiosity and the pursuit of knowledge when he was describing how a teacher in high school, who happened to be a physician, piqued his interest in medicine through his anatomy and physiology class. “I think the amount of knowledge I thought he had. I guess I’m kind of attracted to intelligence in that way, just a world of curiosity that’s why, one of my driving, I was attracted to medicine of course, is because you know I like to know more and more.” In the interview session on educational background, the Internist continued to describe his desire to know more and more. “I loved all of medicine. That’s one of my problems. Going through medical school and even through, pretty much through my life, I have that overwhelming curiosity, you know, wanting to know everything kind of thing.” The overwhelming curiosity made it more difficult for the Internist to choose a specific path in medicine, since everything seemed to interest him.

The Internist's overwhelming desire to seek out new knowledge, although self-derived, was likely created by his parents' value of education, creating a culture of self-improvement in the family. While his parents valued education and encouraged their son to seek more education, they did not always have the answers to the questions that he asked. But his parents' ability to seek out resources for their son, gave the Internist knowledge on ways to garner the resources he needed. "I'm a person that likes to, I don't like to encounter obstacles, but if I do encounter obstacles, I'm a person that's resourceful and creative enough and open enough to find out what the problem might be and try to solve it." This ability to be flexible and find solutions allowed the Internist to seek help when he was not able to pass his board exams, which are a necessary step toward licensure. While the Internist has consistently said that his parents allowed him to be where he is today, it was his own motivation and continual quest for knowledge that brought him through the difficulties of medical school, including bouts of test anxiety that almost led to failure on the board exams. "I'm here, where I am today, because my parents knew their limitations, and they got the resources, and they knew they could get it and did everything possible for me to get to those resources and take advantage of those resources." But it seems that the Internist learned how to take advantage of resources to solve problems that he could not solve on his own under his parents' tutelage. This led to his ultimate success on his last chance to pass the board exams, which moved him forward in his educational career.

I Never Felt Like I Belonged to Any Group in Particular

When the Internist and his parents arrived in the US, they were illegal immigrants. They were practically alone, with an aunt as the only other family member in the states. The family only spoke Spanish, but the Internist's parents began to learn English shortly after their arrival,

so they could obtain jobs. They tried to teach their infant son both Spanish and English in the home, but a delay in their son's speech development resulted in a visit with a speech pathologist, who recommended English only in the home. The young family quickly moved out of a house they shared to an apartment of their own and then a home of their own. Their home was located in a predominantly Caucasian neighborhood, and subsequent homes were also located in predominantly Caucasian neighborhoods. This early multi-cultural beginning lends insight into the Internist's feelings about fitting in as evidenced by the quote for this theme: "I never really had a sense of, I guess you could say, a group. I never felt like I belonged to any group in particular, I guess you could say, just because I was always kind of a minority in every aspect."

Throughout his schooling at religious-based, private schools, the Internist also moved in a different world. He was usually the only Latino in all of his classes, and when he transferred into public school, he was the only Latino in the classes he took, which were advanced-level classes. "In private school, again all the kids there, not all of them, but I'd say half, in fact I was the only Latino in the class. So you know, I was surrounded by Caucasian kids and maybe a few Asian kids. At that time, when I got to, there to this classes in junior high, I was surrounded by a whole different background and cultures." While the Internist never quite felt like he fit in, he was adept at blending in. "I was a kid that could blend in very well in a crowd, I guess you could say." The Internist reiterated this assessment during the interview on cultural background. "I was pretty good at blending in with the crowds. But you know, to say that I was unique, as far as I was, I never, in the classes that I was in in high school I was the only Hispanic or Latino kid in the class."

Throughout his middle and high school years, the Internist was called derogatory names. "In some classes, at least some of the people I was around going through high school, there

definitely, there were some comments always made, like ‘Spic, Wetback,’ those comments thrown at me.” But the Internist ignored his tormenters’ epithets so as not to give them satisfaction or let them know he was hurt. While the comments of his classmates were directed at him, the characterizations had nothing to do with his race or country of origin. As a native of Chile, the racial epithets generally aimed at Mexicans or Mexican Americans did not apply to the Internist. But they were not the only derogatory comments he received. In his travels back to Chile, the Internist was also derided for his accent when speaking Spanish and called a ‘Gringo.’ Despite his lack of acceptance by two cultures when he was growing up, the Internist has embraced both cultures yet is defined by no one culture.

English only was spoken in his home when he was growing up, but the Internist sought to improve his Spanish. When he was in elementary school, his parents sent him to Chile for the summer where he learned more Spanish. A 7-month long trip to Chile after he graduated from college practically doubled his vocabulary. Now, he and his wife teach each other—he teaches her English; she teaches him Spanish, and the Internist has made a commitment to working with patients who are Spanish-speaking. “I get to use a lot of my Spanish at [the hospital where he is doing his residency]. I still use a tremendous amount of my Spanish. I speak it almost every day. I really like using my Spanish, because it’s one of the things that has a, it’s a good thing that I like using it, because it’s a way that I can help my patients.” His ability to use Spanish on a daily basis helped him make the decision to do his residency at the hospital where he is located.

The Internist also made it a priority to be involved in cultural organizations throughout his academic career, although not to the exclusion of other organizations. “I think it doesn’t really matter what activities you choose as long as you know whatever you do, you like what you’re doing, and it’s something with positive interest, positive things that could come out of it.

As far as what made me choose those activities, definitely yes, because you know, I have a, I feel more one with my culture, you know with the Hispanic culture in that aspect.”

The Internist extended this bicultural attitude or no singular identification with one culture into his religious beliefs. His parents were not religious people as the Internist was growing up. When he attended private school, the Internist attended an Episcopalian and Catholic school, and finally in college, he attended a Baptist university. Throughout his life, he has gone through several religious affiliations, but today, he has none. “I would consider myself a person of many religions. Some people have called it, when they try to characterize it, new ageist, but basically, I don’t believe there’s any one religion that’s right.” This religious philosophy fits in with the Internist’s ability to blend in as a junior high and high school student without truly fitting in.

In his self description from the final interview on personal perceptions and goals, neither culture nor ethnicity were descriptors used by the Internist. While he identified himself as Latino rather than Hispanic during the interview on cultural background, his definition of culture had more to do with his every day life than his ethnic background. “Culture to me is what kind of environment that a person is surrounded with in a sense that culture can be anything from the daily, I guess, culture is kind of hard to describe. It’s the kind of thing that I guess you’re brought up with.” Later the Internist equated culture with family upbringing and the activities you do with family. So to him culture is family driven, which may be why the Internist does not feel like he belongs to any particular culture since his immediate family has embraced multiple aspects of culture throughout his life. “Like I say, I consider myself to be somewhat bicultural.” His ability to shift between cultures and his inability to clearly define his culture lends credence to the idea

that the Internist has always been able to blend in anywhere, but never felt like he fit in anywhere.

CHAPTER 8

DISCUSSION AND RECOMMENDATIONS

Overview

While each path was unique, the four participants in this study were similar in that they successfully negotiated the educational landscape to earn their doctoral degrees. Despite their differences, the paths that they traversed led to a common goal and several common themes within the data. How this commonality is related to the literature on student success and barriers to student success is explored in the rest of this chapter.

Research Questions

This study answered three research questions associated with Latino student success at a health science center based on the literature of student success models and barriers to student success. The answers to these questions provide background for a discussion of findings from this study and recommendations for future research and practice.

Research Question 1

The first research question for this study was: What do Latino students perceive to be the reasons for their “success” in higher education at a health science center? Three of the four participants in this study – the Family Doctor, the Scientist, and the Internist – said family background was the biggest influence on their academic success. This finding seems to be consistent with previous studies from Haro & Gonzales (1994), Hernandez (2000), and Hurtado et al. (1992). These researchers have concluded that the central role of family in the lives of Latinos does not diminish across the generations providing a strong foundation that students can

depend on. In this sense, the term family used by Haro & Gonzales, Hernandez, and Hurtado et al. coincides with the phrase family background I used in this study. The three students who said that family background was the biggest influence on their success in higher education echoed this finding, with one of the themes from the Scientist even referring to the foundational role his family background played in his life—"I think I had a pretty good foundation." The fourth participant, the Nurse, said educational background was the biggest influence on her success, but throughout her interviews, the Nurse clearly expressed the importance of family as a source of support, occupying the central role in her life. Each participant confirmed his or her original choice of family as the biggest influence on academic success.

Throughout this study, it became clear that definitions of the influences 1) family background, 2) cultural background, 3) educational background, and 4) personal perceptions and goals were unclear. Neither myself nor the participants defined these influences at the beginning of the interview process; therefore, the definitions used by each participant varied. Each participant crafted his or her own definition of the four influences, and it was only through continued prompting during the interview sessions and analysis of data that I understood the unique definitions used by each participant.

The Family Doctor

The Family Doctor's definition of the term family background seemed to be an expansive one, including other aspects of the four influences. When the Family Doctor attributed his success in higher education to family background, he linked his parents' influence to their limited understanding of education and their limited experience with education. His parents pushed the Family Doctor and his siblings toward educational success, so the concepts

educational background and family background seemed to be intertwined. According to analysis of data in chapter 4, the concept family was tempered by other influences, including culture, so the Family Doctor also seemed to believe that culture was an important part of his family background. The concept mentors, which would normally be part of educational background, also overlapped with family background since the Family Doctor included his parents in his list of mentors. Finally, the Family Doctor's own personal perceptions can be seen in his definition of family background, so it could be argued that the Family Doctor's definition of family background includes all four influences.

The Nurse

The Nurse's definition of educational background seemed to include her own personal determination and will to succeed in higher education. Her family background contributed to this definition as the support system that defined her educational background, which parallels the studies of Haro & Gonzales (1994), Hernandez (2000), and Hurtado et al. (1992), who maintain that the culture of Latinos places family as a central component in their lives. When the Nurse attributed her success in higher education to educational background and her belief in the importance of education, she described how no one was pushing her to go to college or even finish high school until a professor at her school asked what she wanted to do. Later in the interview, the Nurse acknowledged the help that professors in high school and college provided but said she was the most influential person to achieving academic success, lending credence to the importance of personal perceptions and goals within her definition of educational background. In subsequent interviews, the Nurse established a pattern of support for education by her mother and grandmother as she was growing up. Later, the Nurse discussed the

importance of having family members who were supportive of her educational ambitions since their help was needed throughout the educational process. She relied on the help of her mother, her second husband, and her children as she pursued her higher education dreams, so it could be argued that the Nurse's definition of educational background includes personal perceptions and goals, family background, and cultural background as well.

The Scientist

The Scientist's definition of family background seemed to include his belief that his value of education, which was learned from his parents, allowed him to succeed in higher education. Because the Scientist started his interview sessions by tying his parents to education, it seems the two concepts are integral to each other. While the Scientist's parents valued education, he clearly valued education too, finishing high school as salutatorian of his class and choosing academics over athletics. So the Scientist's parents created a culture of education in the home; therefore, it could be argued that the Scientist's definition of family background includes educational background, personal perceptions and goals, and cultural background as well.

The Internist

The Internist's definition of family background seemed to include the culture of self-improvement fostered by his parents, and his own belief that family is the source of a person's development. While the Internist attributed his success in higher education to family background, he talked about how he mimicked his parents' values when he was growing up and does so even today. The Internist said that family background was the reason for his success, but he believed his values were learned from his parents. So it could be argued that the Internist's definition of

family background includes educational background, cultural background, and personal perceptions and goals as well.

Across Cases

The importance of family background among these Latino doctoral students who have been successful at a health science center is revealed in the assertion from three of the four participants who rated family background as the most important influence on their academic success. But the actual definition that all of the participants gave of what they perceived to be the biggest influence on their higher education success consisted of a mix of influences, and family background, as a concept, contains a broad range of meanings for individuals. This finding corroborates the studies of Pace (1980) and Tinto (1993) who found that success in college is a complex mix of different factors. While family background was clearly important to three of the four participants, since they perceived it to be the greatest influence on their higher education success, a more thorough reading of the data shows that multiple factors led to their success in graduate and professional school at a health science center.

Research Question 2

The second research question for this study was: Can the factors that influence the success of Latino students at a health science center be categorized as family background, cultural background, educational background, and personal perceptions and goals, or are the factors that influence the success of Latino students at a health science center unique? In analysis of data using the mind mapping technique, I determined eight concepts consistently reported throughout the interview sessions as indicated in Table 6.

Table 6

Eight Concepts Related to Latino Student Success (Unranked)

Education or system
Personal perceptions and goals
Culture
Family
Language
Mentors
Helping
Money

Note: Cancer was found to be a related concept for one participant's success

Based on the theoretical framework of mind mapping, the concepts were determined in a similar fashion to Padilla's unfolding matrix (R.V. Padilla, personal communication, November 17, 2006), whereby concepts were added to the typology of this study based on information I gleaned from the participants during the interview sessions. Six of the eight concepts appeared in all four interviews, and all eight appeared in three of the four participants' interviews. Upon reflection, the two missing concepts could be added to the fourth participant by re-analyzing the data, so in essence, all eight concepts would appear in all four participants' interviews. The eight concepts, as indicated in Table 6, are educational system, personal perceptions and goals, culture, family, language, mentors, helping, and money. A ninth concept, cancer, appeared in only one of the participants' interviews.

Eight of the nine concepts fit within the framework of the four influences, but the concept of cancer seems to require another influence that was not originally discussed in the literature, the influence of health. Based on the Scientist's assessment of how cancer affected every aspect of his life, the concept of cancer could fit into the four established influences. However, the concept also requires its own category as an influence, since the influence of health or lack

thereof, can be an insurmountable barrier on its own. While research associated with barriers and success in higher education has focused on family background, cultural background, educational background, and personal perceptions and goals, the influence of health, both physical and mental, was clearly a barrier for the Scientist. “Any other barrier has seemed small, insignificant, and not as, not as difficult.” While models and theories of student success have ignored this aspect of life, health or illness of the student or of family members, could certainly affect educational pathways and ultimate success.

Because many students are older in graduate and professional school, health influences may be more of a challenge to student success at the graduate and professional school level than at the undergraduate level. The trend of older students attending college, especially in graduate and professional school, may increase the likelihood that health influences will continue to be an issue that student retention and student success literature and models will need to accommodate.

Research Question 3

The third research question for this study was: Among these students are there similarities in students who “succeed” and graduate? A common denominator between the four participants was a value of education. Within each of their families, education was valued. The participants knew that education was valued by their family members, in particular their parents, because it was expressed. The Family Doctor related his family culture to education, “My family culture made me focus more on my education.” According to the Nurse, “The main thing is the education.” The Scientist’s parents also expressed this value, “Everything else I did, that was fine, but the education was key.” The Internist expressed it slightly differently, but the meaning was the same, “The importance of self-development, it was very high in the environment.” These

are all themes from the interviews with each participant, and they all express the idea of a culture of education within each participant's family. Because of the value their families placed on education, each of the participants was supported in his or her quest for higher education. The support was not financial, since all of the participants paid for college and graduate or professional school by a combination of scholarships, grants, loans, and work. The support was emotional from family members, especially parents. Eventually, what the participants' parents valued became what the participants valued and was measured by their success in higher education. This finding is consistent with what Alire (1997) says regarding the importance of family to minority student self-esteem and development as noted in chapter 2. However, the support that these four students received from their family members runs counter to what Alire (1997) asserts regarding graduate education. Alire (1997) says that minority student family members often withdraw their support for graduate education, but this was not the case for the four participants in this study. Their family members continued to provide emotional support throughout their graduate and professional school careers. A study from Tornatzky et al. (2003) also found that Latino students who rely on family for emotional and financial support may also pass up higher education opportunities to comply with culture. Again, this was not the case for the four participants in this study.

Another commonality that fit in with their focus on education was a strong desire by all of the participants in the study to do better every day. Their focus on improvement of performance was an integral part of the culture of education developed within their lives, signifying a strong internal locus of control among the individual participants. For the Family Doctor, the drive to do better resulted in a competitive nature that manifested itself in athletics and academics. For the Nurse, this drive to do better every day is part of her personal philosophy

and outlook on life. She calls the drive an “internal thing that I have to do better every day. That’s me. I have that drive.” For the Scientist, this drive to do better every day was a lesson his mother taught him at an early age. Instead of academic competition with others, the Scientist’s mother taught him to measure his performance on previous efforts, making sure that each new performance improved on the last. The Scientist internalized this belief moving from an external locus of control driven by his mother to an internal locus of control guiding his own belief system. For the Internist, the idea of doing better every day is also wrapped up in his philosophy of life. He is striving for perfection in his own life and hopes that others are doing the same.

The idea of improvement on past performance takes into account two ideas that research has shown are important in higher education success, motivation and goals. In Polinsky’s (2003) study of student retention, students were asked what was the reason for their success in completing a degree. Almost 95% of the approximately 3,000 students surveyed said that self-determination and motivation were the reasons for their success, indicating a strong internal locus of control. Other researchers (Allen & Nora, 1995; Arcuri et al., 1982; Astin, 1975; Cardoza, 1991; Terenzini & Wright, 1987) also found self-determination and motivation to be important factors in college success. The four participants in this study corroborate this finding and have found these two factors to be important enough to claim a philosophy of improving on past performance or striving to perfection as philosophies of life.

Another commonality that these four participants had was a positive or optimistic outlook, which is also associated with a tendency toward an internal locus of control. According to Hernandez (2000), success among Latino undergraduate students was tied to positive mental outlook rather than grades. The students in Hernandez’s (2000) study themselves reported that this positive mental outlook, or the idea that they would be successful in college, was the most

important factor to their college success. Other studies support this finding (Harrington & Boardman, 1997; Tinto, 1998), including Enright & Gitomer's (1989) study of graduate students. Research data from the four participants in this study seem to corroborate this finding for successful Latino students at this health science center. Words used in the present study such as "barriers" were changed to the word "challenges" by the research participants. These challenges were used as motivational factors rather than obstacles by the participants along their pathways to educational success. Rejecting of negative messages was also found to be an important aspect of student success, according to a study from Morales (2000). All four participants mentioned this positive mental outlook, which allowed them to become successful in higher education. The Family Doctor's positive mental outlook manifested itself in his vision of himself being successful. "I knew what I wanted. I knew the end result would be me a physician." The Nurse's positive mental outlook was really a part of her philosophy of life, seeing challenges as motivators not barriers. Her belief in herself and her abilities are summed up in the phrase, "Nothing is hard for me. I know I can do it." Her can-do attitude is evident in her story and her ability to stay motivated to obtain her doctoral degree after 35 years. The Scientist's positive mental attitude is evident in how he dealt with the biggest barrier of his life – cancer. While the Scientist acknowledged that cancer was a barrier to his success, he used it as a motivational force, putting a life-threatening situation into a positive light and rejecting negative messages. "Educationally, it [cancer] has, I think, it's made me work harder--not that having cancer would prevent me from doing anything." This statement also clearly shows the Scientist's orientation toward an internal locus of control since he downplayed the effect of an external factor, in this case cancer, on his ability to accomplish his goals. The Internist's positive mental outlook manifested itself in a healthy academic self-concept. While the Internist readily admitted he has

always had problems with reading, which may have resulted in him failing the board exams twice, he was able to find a solution instead of dwelling on what might happen if he failed a third and final time. “I’m a person that likes to, I don’t like to encounter obstacles, but if I do encounter obstacles, I’m a person that’s resourceful and creative enough and open enough to find out what the problem might be and try to solve it.”

A positive mental outlook can also be seen in how each of these participants handled potential barriers such as discrimination and racism, again rejecting negative messages. According to Grandy (1998), discrimination and racism can be powerful barriers to students. Several studies (Allen, 1999; Cardoza, 1991; Hurtado, 1992 & 1994; Loo & Rolison, 1986; Nora and Cabrera, 1996; Smedley et al., 1993; Solberg, 1993) have found that the barriers that most impede minority student success include poor self-concept and the inability to cope with racism in an academic setting. The four research participants in this study clearly indicated that they have high self-concepts as evidenced by their positive mental outlooks, indicating a strong internal locus of control. When faced with instances of discrimination and racism, the four participants were also able to find ways to cope by seeking cultural community. Throughout their lives, the four participants have either ignored what they perceived to be discrimination or questioned it. When they made their way into graduate or professional school, the Family Doctor, the Scientist, and the Internist actively sought other Latino students through involvement in student organizations, finding support from students like themselves as a possible means of coping with discrimination and racism. The Scientist and the Internist both served as presidents of different Latino groups on campus. The Family Doctor was part of a group of students that helped charter one of the minority groups on campus, specifically targeting Latino students. The Nurse sought a doctoral degree from a school with a high percentage of Latino faculty members

and students. She even convinced a Latina coworker to go through the doctoral coursework with her, so while she was not involved in Latino organizations on campus, she found her own fit and sense of cultural community within the university. The way these four participants approached fitting in with their graduate school to help them cope with marginality and possible discrimination seems to lend credence to Schlossberg, et al.'s (1989) theory of mattering/marginality. Rather than feeling out of place, each of the participants sought cultural community, feeling a sense of inclusion, so they mattered to other students and the university. Their willingness to seek individuals who looked like them and shared their cultural values helped create a sense of critical mass where none existed. This also fits in with the findings of Hernandez (2000), who found that successful Latino students said that meeting other Latino students who were successful or who were succeeding was an important part of their success.

Another similarity in all the participants is a difficulty in defining culture. Some participants had a more difficult time in defining culture than others, but all of them seemed to find the concept hard to define. Culture is considered by some researchers to be a hindrance to higher education success for minority students, but if the concept cannot be defined does it have the same effect? This is a question that was beyond the scope of this study, but the question is one worth further study in relation to higher education success.

Discussion

When I began this study, my feeling was that motivation was the dominant force leading to graduate and professional success. Because the barriers to this ultimate achievement in higher education are so great, I thought it only stood to reason that personal motivation would have to be what gets a student through. As I listened to the four participants' stories, I was surprised. As

I began analyzing the data, I was even more surprised at the results. While I thought motivation was such a key component to higher education success, three of the four participants disagreed and said family was the biggest influence on their success. What was even more surprising was the more I looked at the data, the more I saw a complex mix of factors both ingrained and acquired that led these four people to higher education success. Another startling fact was that family did seem to be at the center of all four success stories, no matter what each participant said was the biggest influence on his or her success. And while family was what three of the four participants said was the biggest influence on their higher education success, their definition of family included more than just family influences, leading me to wonder if family was the motivating force for at least three of the four participants. The definition or conceptualization of the term family from a strictly denotative perspective as well as a cultural perspective could shape the participants' view of family and its effect on life paths. Determining a more concrete conception of the phenomenon family as it relates to student success would need to be determined to effectively evaluate its influence among Latino students at a health science center.

Through the pathways of all four participants one thing seemed certain, four concepts served as the dominant influences on their success – family, personal perceptions and goals, education, and culture. While the order was slightly different for each person, all four participants had these four concepts as the top four in the list of eight concepts that were derived from the research data. These four concepts were also part of the definition of family background that three of the four participants said was the biggest influence on their higher education success. The four concepts were also part of the definition of educational background that the fourth participant said was the biggest influence on her success. How these four concepts interplay with each other and affect each participant singularly, in tandem, or as a group is

beyond the scope of this study, but something that varied from person-to-person. Likely, this variance occurs with everyone who has experienced higher education success, which is something that the research from Pace (1980) and Tinto (1993) shows. To really focus on how these four concepts individually affect student success at a more global level, a clear definition of each of the concepts is needed.

Current definitions of cultural and ethnic affiliation hearken to days gone by when the lines between and among races were defined by governmental entities. This artificial line or definition of Hispanic was used to determine who would be included in this study; however, the reality of who falls under the term Hispanic, includes biracial and multiracial people who may not even consider themselves Hispanic. In this study, three of the four participants had strong opinions about the difference between Hispanic and Latino, and all four participants preferred to be identified as either Hispanic or Latino, indicating that this arbitrary governmental definition may be problematic when undertaking a study such as this. Bridging the gap between the artificial governmental definitions of race, which are often used when reporting demographics, and the reality of how people see themselves is important when undertaking this type of study. Allowing people to create their own definitions of identity and cultural community seemed to allow for a shared sense of success through the creation of belonging. This may also be a key in reviewing possible campus engagement models to be used at health science centers as a way to increase community among Latino students.

The importance of belonging and a sense of community for Latino students at a health science center was unclear to me until I began writing this chapter. While each participant in this study sought community in different ways, it became clear to me that each one did seek community despite their cultural identification, whether community was sought through campus

organizations, as the Family Doctor, the Scientist, and the Internist did, or by bringing community into the classroom by convincing coworkers to enroll in similar academic programs, which is what the Nurse did. Creating a sense of community or shared experience seems to be important to all graduate and professional students as they cope with the difficulties of coursework and life, but this sense of community may have an even greater impact on students in a minority group where critical mass does not exist on campus. For these four participants, creating community seemed to be related to connections with people of like culture. Community allows people to fit in and experience a sense of belonging, which can create a sense of critical mass where none exists. This act is directly related to Schlossberg et al.'s (1989) theory of mattering/marginality and may have some impact on practice at health science centers.

A sense of community or mattering was also evident in how two of the participants described their disciplines. This was most evident in the descriptions provided by the Internist and the Scientist. A sort of culture surrounds the fields of medicine and science, and these two participants were inculcated into that culture during their studies at the health science center. The Scientist became an advocate for all graduate students as president of their campus organization, and his strong relationship with his mentor provided for increased opportunities for success at the health science center and in science. The Internist also became an advocate for medical students, serving as president of a campus organization. He also formed a close relationship with a physician/researcher at the health science center, which provided him with more opportunities for success at the health science center and in medicine. Because the Scientist and the Internist were embraced by their disciplines and received into this new community, their pathways were cleared for increased opportunity and success. While community had a different definition for the Scientist and the Internist in this instance, it seems that a sense of mattering or marginality

can take on a variety of guises. While inquiry into the idea of mattering within one's discipline is outside the scope of this study, it is a question that could affect the overall success of Latinos in a variety of fields, but in this instance in the health sciences.

A curious finding is the addition of the concept of cancer as a barrier to the Scientist's higher education success. The finding is not so curious in that cancer would be a barrier to higher education success--the finding is curious because previous research has not taken into account health as an influence that could affect student outcomes. In a time when the average age of students continues to rise and more students with chronic disabilities are enrolling in colleges of all kinds, the influence of health will likely become more prominent. This is an issue that educators will need to figure into student success models. While the Scientist was in a small department with supportive mentors, many students find themselves in situations that are not as supportive. As health continues to be an issue for students, finding support to keep them motivated and in college despite health problems will be a challenge for faculty members and administrators alike.

Finally, two questions did arise in this study that cannot be answered by the data gathered from the four participants. Are the four people in this study anomalies? Because of their personal characteristics, which seem to contradict much of current research on Latino studies, do these four students represent extreme cases or outliers? Only more research on this topic can answer that question. And do people who are successful see barriers as well as those who are having some trouble or who are not successful? The Nurse is probably the best example of why this question is important. Barriers to her success were plentiful, but her attitude was: 'I can do it no matter what the barriers.' When someone has such supreme confidence in their direction and abilities, can they clearly see areas that may trip up others? While these questions are worth

exploring in another study, they are definitely something to bear in mind when reviewing the findings from this study.

Contribution to the Knowledge Base

While much has been done to study barriers to student success, little research has been done to identify factors for student success. Currently, student success models or pathways to student success, focus on undergraduate education. This study expands inquiry into Latino student success at the graduate and professional school level, studying Latino students who have completed doctoral degrees at a health science center. Understanding the pathways that successful Latino students have taken is the first step in developing student success models for Latino students at this level of higher education.

Recommendations for Further Research

Expanding this research to include students at multiple health science centers would give a better idea of the pathways that Latino students take to higher education success at these specialized institutions. By expanding the focus of this study to multiple institutions, overall patterns may begin to develop in Latino student success stories. In analyzing data from this study and comparing it to current literature on student success, it became clear that the issue of health is absent in the literature. With the changing population of the student body at all levels of higher education, this potential influence must be integrated into student success models and analyzed as a potential barrier. Health of the student or family members may impede or stop progress of the student toward degree completion and could be analyzed as a barrier to success that is currently not included in most studies.

Looking at the reasons why Latino students pursue graduate or professional education in science and medicine might give insight on how to attract and keep Latino students in these two fields. While this question was not part of this study, combining the answer to the question of why Latino students are interested in these two fields compared with the reasons other students enter these two fields could provide information that would be useful in designing intervention programs that might increase Latino student interest in science and medicine. Also considering the role that Hispanic Serving Institutions play in the pathways of Latino students and how that affects their performance at a health science center compared with students who come from an institution serving an Anglo majority might also provide insight and a venue for further exploration. And finally, all of these studies could be redesigned to address other minority groups such as Native Americans and African Americans, who are also underrepresented in science and medicine.

Recommendations for Practice

1. A shift in thinking needs to occur at health science centers, moving to more of a campus engagement model.

Campus engagement is found to be an important part of the collegiate experience, particularly at undergraduate institutions. Among these four research participants, three attributed their success to the ability to become engaged on campus. At health science centers, campus engagement is underrated and underutilized. Taking a closer look at current campus engagement models and how they might fit at a health science center would help create a shift in thinking. The Sullivan Commission report (2004) addressed the need to create an institutional climate that is welcoming and supportive to increase minority student success. Creating campus organizations that are more closely tied to faculty members who are supportive of diversity

initiatives lends more credibility to the student organizations and accomplishes the student affairs function of linking participation in student organizations to increasing student learning outcomes.

2. The results from this study suggest that fostering ways for students to create community is important to student success.

At most institutions of higher education, this translates into student organizations that focus on specific topics or specific groups. At most health science centers, student organizations do exist, but there is an unwritten rule that students should focus on their studies to the exclusion of campus organizations. Putting more focus on student needs to provide a more supportive environment where students can create and foster community with the support of faculty and administrators would provide a more inclusive atmosphere at health science centers. This idea ties in with a shift in thinking at health science centers. Creating community among students in any minority group is a way to create a sense of critical mass where none exists, allowing students to feel more at home in the university, reducing barriers of racism and discrimination.

3. The findings from this study indicate that a strong internal locus of control as indicated by a high self-concept, positive mental outlook, and an ability to cope with racism and discrimination was important for these four participants in their academic success.

Studies show that these factors, more commonly associated with motivation, are often indicative of student success. Student affairs practitioners, administrators, and faculty members could find ways to foster a stronger internal locus of control among students by offering specific training on how to set and achieve goals and providing peer-mentoring opportunities. Other activities to help foster a stronger internal locus of control may have implications for leadership training in regards to the healthcare profession and the community. Campus-wide workshops, including faculty, staff, and student training regarding diversity initiatives could help reduce the

level of racism and discrimination on campus and help foster a more inclusive environment. This is consistent with the Sullivan Commission's (2004) recommendation for achieving a welcoming climate at health science centers.

4. The role of family in the motivational success of these four participants seems to indicate that practitioners will want to continue outreach programs that include family members and expand them to address the expanded definition of family.

What we know about the family unit needs to be reexamined in light of what we know about older students. Since graduate and professional students tend to be older and also tend to have families, the outreach efforts that are associated with typical undergraduate institutions may only meet with limited success. While current practice at undergraduate institutions has included programs to foster participation between family members and students in educational success, health science centers have seemed to be slow in developing such programs that address the role of family in student success. Establishing or expanding programs that address the role of family in Latino student success at a health science center could provide students with much-needed emotional support and expand the culture of the institution to one that is more family-friendly. Expanding family outreach models to include spouses and children would be particularly relevant at a health science center. The increased burden on family members results in a high rate of divorce, especially among students studying to become doctors. Instituting family-focused help groups could reduce some of the stress on family members and students as they make their way through the doctoral process.

APPENDIX A

QUESTIONS PRIOR TO INTERVIEW

Question 1. How well did the investigator know the subject and what was their relationship? (17)

Question 2. What were the circumstances in which the subject related his life history? What was the form in which it was recorded? Did he write it alone? Did he dictate it to the ethnographer? If so, where and how did this happen?

Question 3 What inducements, persuasions, arguments, and reasons did the ethnographer use to motivate the subject to relate his life?

Question 4 What, if anything, did the subject have to say about the data-collecting situation and its requirements, and in what way did he think it influenced his recollection of his life? (18)

Question 5 What were the investigator's own preconceptions about the culture, the subject, and the data-collecting situation, and what self-perceived theoretical commitments did he have the might have influenced how he collected, arranged, and interpreted the material?

Question 6 To what extent were questions used to elicit autobiographical data? What particular questions were used? How did the use of certain questions influence specific aspects of the recollected life history?

Question 7 To what extent was a native interpreter used to translate the life history from the original recitation, and what was his role in the process of data gathering? (19)

Question 8 What techniques were used to record the life history?

Question 9 To what extent, if at all, has the original life history material, as dictated or written down, been edited in the final presentation as text? What has been eliminated from the native informant's original account? To what degree has the recorder and/or editor rearranged the life history to conform to a logical chronological sequence? (20)

Questions from: Watson, L. W. & Watson-Franke, Maria-Barbara. (1985). *Interpreting life histories: An anthropological inquiry*. New Brunswick, NJ: Rutgers University Press.

APPENDIX B

SEMI-STRUCTURED INTERVIEW

Influences

1) Family Background

- a. How would you describe your parents?
- b. Was your family different from others in the neighborhood? In what ways?
- c. What were some of your struggles as a child?
- d. Was education valued by your family? How did you know that?
- e. Describe how your family influenced who you are today...
- f. Tell me about your family...your husband(s) and children...
- g. Were they influential on your education in good or bad ways?
- h. Would you consider your role as wife and mother a barrier to your education? Did it help you, hurt you, or make no difference?
- i. And how did your family progress over the years?
- j. How were they integrated into your high education?
- k. Do you think you served as a role model for your children? Why or why not?
- l. What did they say when you told them you were going back to school to get your DrPH?
- m. Were they all supportive and how? Were there things that you wish they would have done to help you? Why or why not?
- n. Do you think your childhood affected how you raised your own children? How?
- o. If you could go back and do things differently, what would you do? If not, why not?

2) Cultural Background

- a. Would you identify yourself as Hispanic, Latino, or something else?
- b. When I say culture, what does that mean to you?
- c. Describe how culture has affected your life....
- d. Is religion part of culture? Why or why not? Has it affected your educational path?
- e. What about your family? How does culture fit into that equation or does it? What is the culture of your family—your family as a child, and your current family?
- f. Do you think that culture affected your educational path? How?
- g. Have the institutions that you attended made you feel like you fit in? How did they do that? Was culture a component of that? Were you involved in “cultural organizations” on campus? What was your purpose in being involved or not in such organizations?
- h. Do you feel like discrimination has affected you at any time in your educational path?
- i. Do you feel like culture continues to affect your life path? How?
- j. Are you still involved in cultural activities? Why or why not? What does that mean to you?
- k. How have you conveyed your idea of culture to your children? Have they valued culture in the way that you hoped they would? Is there anything that you wish they would focus on that they don’t?

3) Educational Background

- a. Tell me about your academic path....

- b. Describe your early school years (primary/secondary)...
- c. What are your best memories of school? Your worst?
- d. When did you decide you wanted to go to college? Did anyone influence that decision?
- e. Had you always wanted to attend college? Why or why not?
- f. Who were the most influential people in your life to your achieving academic "success"? Why? What did they do that was so helpful?
- g. Have you had any barriers to your college success? Can you describe or list some of the barriers? What did you do to overcome them?
- h. Do you think these barriers existed for everyone?
- i. What kind of advice would you give other students in overcoming these barriers?
- j. Do you plan to seek any further education?

4) Personal Perception and Goals

- a. How do you define academic success?
- b. Would you consider yourself successful academically? Why or why not?
- c. What are the crucial decisions in your life?
- d. How did you end up in the type of work you do or did?
- e. Is your life fulfilled yet? Explain...
- f. If you had to describe yourself, how would you describe yourself?
- g. What drives you? What are your passions?
- h. Do you feel like a certain event or events helped you get where you are today? What was that?
- i. Why have you sought higher education? Have you been successful in getting what you wanted from your education?
- j. What does goal-oriented mean to you? Would you consider yourself goal-oriented? Why or why not?
- k. Do you feel that you have given a fair picture of yourself? Why or why not?

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